

## Appendix B

James River Association



*Environmental education students*

## Findings of Appropriateness and Compatibility Determinations

- Collecting Natural Products
- Cross Country Skiing, Snowshoeing, and Sightseeing
- Dog Walking
- Geocaching
- Picnicking
- Swimming and Sunbathing
- Research by Non-Service personnel
- Public Deer Hunting
- Wildlife Observation, Photography, Environmental Education, and Interpretation

## Findings of Appropriateness and Compatibility Determinations

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## APPENDIX B

### Findings of Appropriateness and Compatibility Determinations

Public Use	Finding of Appropriateness	Compatibility Determination
Collecting Natural Products	Not Appropriate; Draft awaiting review with CCP	<i>(not required per policy)</i>
Cross Country Skiing, Snowshoeing, and Sightseeing	Not Appropriate; Draft awaiting review with CCP	<i>(not required per policy)</i>
Dog Walking	Not Appropriate; Draft awaiting review with CCP	<i>(not required per policy)</i>
Geocaching	Not Appropriate; Draft awaiting review with CCP	<i>(not required per policy)</i>
Picnicking	Not Appropriate; Draft awaiting review with CCP	<i>(not required per policy)</i>
Swimming / Sunbathing	Not Appropriate; Draft awaiting review with CCP	<i>(not required per policy)</i>
Research by Non-Service Personnel	Appropriate; Draft awaiting review with CCP	Draft awaiting review with CCP
Public Deer Hunting	<i>(not required per policy)</i>	Draft awaiting review with CCP
Wildlife Observation, Photography, Environmental Education, and Interpretation	<i>(not required per policy)</i>	Approved 10/10/2011

FWS Form 3-2319  
02/06**FINDING OF APPROPRIATENESS OF A REFUGE USE****Refuge Name:** Presquile National Wildlife Refuge**Use:** Collecting Natural Products

This form is not required for wildlife-dependent recreational uses, take regulated by the State, or uses already described in a refuge CCP or step-down management plan approved after October 9, 1997.

<b>Decision Criteria:</b>	<b>YES</b>	<b>NO</b>
(a) Do we have jurisdiction over the use?	<input checked="" type="checkbox"/>	
(b) Does the use comply with applicable laws and regulations (Federal, State, Tribal, and local)?	<input checked="" type="checkbox"/>	
(c) Is the use consistent with applicable Executive orders and Department and Service policies?	<input checked="" type="checkbox"/>	
(d) Is the use consistent with public safety?	<input checked="" type="checkbox"/>	
(e) Is the use consistent with goals and objectives in an approved management plan or other document?		<input checked="" type="checkbox"/>
(f) Has an earlier documented analysis not denied the use or is this the first time the use has been proposed?	<input checked="" type="checkbox"/>	
(g) Is the use manageable within available budget and staff?		<input checked="" type="checkbox"/>
(h) Will this be manageable in the future within existing resources?		<input checked="" type="checkbox"/>
(i) Does the use contribute to the public's understanding and appreciation of the refuge's natural or cultural resources, or is the use beneficial to the refuge's natural or cultural resources?	<input checked="" type="checkbox"/>	
(j) Can the use be accommodated without impairing existing wildlife-dependent recreational uses or reducing the potential to provide quality (see section 1.6D, 603 FW 1, for description), compatible, wildlife-dependent recreation into the future?	<input checked="" type="checkbox"/>	

Where we do not have jurisdiction over the use ["no" to (a)], there is no need to evaluate it further as we cannot control the use. Uses that are illegal, inconsistent with existing policy, or unsafe ["no" to (b), (c), or (d)] may not be found appropriate. If the answer is "no" to any of the other questions above, we will **generally** not allow the use.

If indicated, the refuge manager has consulted with State fish and wildlife agencies. Yes \_\_\_\_\_ No ☒.

When the refuge manager finds the use appropriate based on sound professional judgment, the refuge manager must justify the use in writing on an attached sheet and obtain the refuge supervisor's concurrence.

Based on an overall assessment of these factors, my summary conclusion is that the proposed use is:

**Not Appropriate** ☒**Appropriate** \_\_\_\_\_

Refuge Manager: \_\_\_\_\_ Date: \_\_\_\_\_

If found to be **Not Appropriate**, the refuge supervisor does not need to sign concurrence if the use is a new use.

If an existing use is found **Not Appropriate** outside the CCP process, the refuge supervisor must sign concurrence.

If found to be **Appropriate**, the refuge supervisor must sign concurrence:

Refuge Supervisor: \_\_\_\_\_ Date: \_\_\_\_\_

**A compatibility determination is required before the use may be allowed.**

## JUSTIFICATION FOR A FINDING OF APPROPRIATENESS OF A REFUGE USE

**Refuge Name:** Presquile National Wildlife Refuge

**Use:** Collecting Natural Products

### **NARRATIVE:**

To comply with 2006 U.S. Fish and Wildlife Service (Service) policy on appropriateness, all non-priority public uses for Presquile National Wildlife Refuge (Presquile NWR, the refuge) are being evaluated. Collection of natural products for personal use or consumption includes living and non-living materials such as firewood, berries, native vegetation, deer antler sheds, amphibians, reptiles. The collection of natural products is not identified as a priority public use of the National Wildlife Refuge System under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57). This use is considered a general public use that is not a wildlife-dependent recreational use (as defined in the Improvement Act) and does not contribute to fulfillment of refuge purposes, goals, or objectives as described in current refuge management plans. In accordance with the Appropriate Use Policy (603 FW 1), general public uses are the lowest priorities for refuge managers to consider. These uses will not be allowed on the refuge for several main reasons.

First, collecting of natural materials is prohibited on refuge lands by 50 Code of Federal Regulations (CFR) 27.51, except by special use permit.

Second, collecting natural materials does not support the biological goals and objectives for Presquile NWR, as defined in the comprehensive conservation plan for the refuge. These goals and objectives emphasize conserving habitats and species of conservation concern. Collecting natural materials also does not support the refuge's purpose as an "inviolate sanctuary...for migratory birds." Allowing visitors to collect natural materials could lead to negative impacts to migratory birds, other wildlife species, and their habitats they rely upon. Negative impacts may include trampling of vegetation and wildlife disturbance. Visitors walking off established public use trails may impact plants indirectly by compacting soils, increasing erosion, and walking on young plants, reducing survival and regeneration (Colorado State Parks 1998). Berries, native plants, and shed antlers can be important sources of food for various wildlife species and the removal of these can have adverse effects.

After evaluating these uses under Service policies, the collection of natural products for personal use or consumption will not be allowed. In summary, collecting natural materials does not support a refuge purpose, goal, or objective and would not benefit the resources within the refuge. As such, allowing this use would divert resources (staff time and funding) away from our habitat and species management priorities and priority public uses. These, and similar activities, are not appropriate public uses for the refuge.

### **LITERATURE CITED:**

Colorado State Parks. 1998. Planning trails with wildlife in mind: a handbook for trail planners prepared by Trails and Wildlife Task Force and Hellmund Associates. 51 pp. Accessed June 2012 at: <http://www.fs.fed.us/outdoors/naturewatch/start/planning/Trails-for-Wildlife-Handbk.pdf>.

**FINDING OF APPROPRIATENESS OF A REFUGE USE****Refuge Name:** Presquile National Wildlife Refuge**Use:** Cross Country Skiing, Snowshoeing, and Sightseeing

This form is not required for wildlife-dependent recreational uses, take regulated by the State, or uses already described in a refuge CCP or step-down management plan approved after October 9, 1997.

<b>Decision Criteria:</b>	<b>YES</b>	<b>NO</b>
(a) Do we have jurisdiction over the use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b) Does the use comply with applicable laws and regulations (Federal, State, Tribal, and local)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(c) Is the use consistent with applicable Executive orders and Department and Service policies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d) Is the use consistent with public safety?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(e) Is the use consistent with goals and objectives in an approved management plan or other document?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(f) Has an earlier documented analysis not denied the use or is this the first time the use has been proposed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(g) Is the use manageable within available budget and staff?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(h) Will this be manageable in the future within existing resources?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(i) Does the use contribute to the public's understanding and appreciation of the refuge's natural or cultural resources, or is the use beneficial to the refuge's natural or cultural resources?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(j) Can the use be accommodated without impairing existing wildlife-dependent recreational uses or reducing the potential to provide quality (see section 1.6D, 603 FW 1, for description), compatible, wildlife-dependent recreation into the future?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Where we do not have jurisdiction over the use ["no" to (a)], there is no need to evaluate it further as we cannot control the use. Uses that are illegal, inconsistent with existing policy, or unsafe ["no" to (b), (c), or (d)] may not be found appropriate. If the answer is "no" to any of the other questions above, we will **generally** not allow the use.

If indicated, the refuge manager has consulted with State fish and wildlife agencies. Yes \_\_\_\_\_ No ☒.

When the refuge manager finds the use appropriate based on sound professional judgment, the refuge manager must justify the use in writing on an attached sheet and obtain the refuge supervisor's concurrence.

Based on an overall assessment of these factors, my summary conclusion is that the proposed use is:

**Not Appropriate** ☒ **Appropriate** \_\_\_\_\_

Refuge Manager: \_\_\_\_\_ Date: \_\_\_\_\_

If found to be **Not Appropriate**, the refuge supervisor does not need to sign concurrence if the use is a new use.

If an existing use is found **Not Appropriate** outside the CCP process, the refuge supervisor must sign concurrence.

If found to be **Appropriate**, the refuge supervisor must sign concurrence:

Refuge Supervisor: \_\_\_\_\_ Date: \_\_\_\_\_

**A compatibility determination is required before the use may be allowed.**

## **JUSTIFICATION FOR A FINDING OF APPROPRIATENESS OF A REFUGE USE**

**Refuge Name:** Presquile National Wildlife Refuge

**Use:** Cross Country Skiing, Snowshoeing, and Sightseeing

### **NARRATIVE:**

To comply with 2006 U.S. Fish and Wildlife Service (Service) policy on appropriateness, all non-priority public uses for Presquile National Wildlife Refuge (Presquile NWR, the refuge) are being evaluated. Cross country skiing, snowshoeing, and sightseeing are not identified as a priority public use of the National Wildlife Refuge System under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57). These uses are considered general public uses that are not wildlife-dependent recreational uses (as defined in the Improvement Act) and do not contribute to fulfillment of refuge purposes, goals objectives as described in current refuge management plans. In accordance with the Appropriate Use Policy (603 FW 1), general public uses are the lowest priorities for refuge managers to consider. These uses have previously been found to be not appropriate for Presquile NWR in 2007.

Allowing these uses to occur on the refuge would divert refuge management resources from priority general public uses or away from our responsibilities to protect and manage fish, wildlife, and plants and their habitats.

Therefore, cross country skiing, snowshoeing, and sightseeing are determined to be inappropriate.

**FINDING OF APPROPRIATENESS OF A REFUGE USE****Refuge Name:** Presquile National Wildlife Refuge**Use:** Dog Walking

This form is not required for wildlife-dependent recreational uses, take regulated by the State, or uses already described in a refuge CCP or step-down management plan approved after October 9, 1997.

<b>Decision Criteria:</b>	<b>YES</b>	<b>NO</b>
(a) Do we have jurisdiction over the use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b) Does the use comply with applicable laws and regulations (Federal, State, Tribal, and local)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(c) Is the use consistent with applicable Executive orders and Department and Service policies?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(d) Is the use consistent with public safety?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(e) Is the use consistent with goals and objectives in an approved management plan or other document?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(f) Has an earlier documented analysis not denied the use or is this the first time the use has been proposed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(g) Is the use manageable within available budget and staff?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(h) Will this be manageable in the future within existing resources?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(i) Does the use contribute to the public's understanding and appreciation of the refuge's natural or cultural resources, or is the use beneficial to the refuge's natural or cultural resources?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(j) Can the use be accommodated without impairing existing wildlife-dependent recreational uses or reducing the potential to provide quality (see section 1.6D, 603 FW 1, for description), compatible, wildlife-dependent recreation into the future?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Where we do not have jurisdiction over the use ["no" to (a)], there is no need to evaluate it further as we cannot control the use. Uses that are illegal, inconsistent with existing policy, or unsafe ["no" to (b), (c), or (d)] may not be found appropriate. If the answer is "no" to any of the other questions above, we will **generally** not allow the use.

If indicated, the refuge manager has consulted with State fish and wildlife agencies. Yes \_\_\_\_\_ No ☒.

When the refuge manager finds the use appropriate based on sound professional judgment, the refuge manager must justify the use in writing on an attached sheet and obtain the refuge supervisor's concurrence.

Based on an overall assessment of these factors, my summary conclusion is that the proposed use is:

**Not Appropriate** ☒**Appropriate** \_\_\_\_\_

Refuge Manager: \_\_\_\_\_ Date: \_\_\_\_\_

If found to be **Not Appropriate**, the refuge supervisor does not need to sign concurrence if the use is a new use.

If an existing use is found **Not Appropriate** outside the CCP process, the refuge supervisor must sign concurrence.

If found to be **Appropriate**, the refuge supervisor must sign concurrence:

Refuge Supervisor: \_\_\_\_\_ Date: \_\_\_\_\_

**A compatibility determination is required before the use may be allowed.**



## JUSTIFICATION FOR A FINDING OF APPROPRIATENESS OF A REFUGE USE

**Refuge Name:** Presquile National Wildlife Refuge

**Use:** Dog Walking

### **NARRATIVE:**

To comply with 2006 U.S. Fish and Wildlife Service (Service) policy on appropriateness, all non-priority public uses for Presquile National Wildlife Refuge (Presquile NWR, the refuge) are being evaluated. Dog walking is not identified as a priority public use of the National Wildlife Refuge System under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57). This use is considered a general public use that is not a wildlife-dependent recreational use (as defined in the Improvement Act) and does not contribute to fulfillment of refuge purposes, goals, or objectives as described in current refuge management plans. In accordance with the Appropriate Use Policy (603 FW 1), general public uses are the lowest priorities for refuge managers to consider. Dog walking will be prohibited on the refuge for several reasons.

Dog walking does not support the biological and public use goals and objectives for Presquile NWR, as defined in the comprehensive conservation plan for the refuge. These goals and objectives emphasize conserving habitats and species of conservation concern and offering priority, wildlife-dependent recreational uses to help visitors build an appreciation and understanding for the refuge's natural and cultural resources. Dog walking also does not support the refuge's purpose as an "inviolate sanctuary...for migratory birds." Allowing dog walking on the refuge may prevent us from achieving our goals, objectives, and the refuge purpose because the presence of dogs can negatively impact migratory birds and other wildlife species, either directly through predation or indirectly by displacing wildlife species. Many wildlife species perceive dogs as natural predators, which causes them to react to the presence (visual/scent) of dogs. Common reactions include vacating and avoiding areas disturbed by dogs (Lima and Bednekoff 1999, Lenth et al. 2006). Domestic dogs can also depredate native wildlife (Gill 1994). Researchers have found that dogs displace native migratory bird species from their native habitats (Banks and Bryan 2007). Studies have also indicated that the presence of dogs on trails can decrease wildlife use within 330 feet (100 meters) of the trail (Lenth et al. 2006). Allowing dog walking may also conflict with public use goals and objectives because the displacement of wildlife by dogs could materially interfere with wildlife observation, a priority public use of the refuge.

In summary, dog walking does not support a refuge purpose, goal, or objective; would not benefit the resources within the refuge; and would not contribute to visitors' appreciation and understanding of the refuge or its resources. As such, allowing this use would divert resources (staff time and funding) away from our habitat and species management priorities and priority public uses. Based on this analysis, dog walking will be prohibited on the refuge. Existing signage indicating dogs are not permitted will be maintained and enhanced, as needed, to improve compliance. There are also many sites throughout the surrounding area that provide opportunities for accompaniment by a pet.

### **LITERATURE CITED:**

- Banks, P.B. and J.V. Bryant. 2007. Four-legged friend or foe? Dog walking displaces native birds from natural areas. *Animal Behavior* 3: 611-613.
- Gill, M. 1994. Bird flushing by dogs at proposed Eastshore State Park: Can they all just get along? *In* Contemporary Topics in Environmental Sciences. D. Sloan, E. Edlund, M. Christensen, K. Taylor, eds. U.C. Berkeley, Berkeley, Ca.
- Lenth, B., M. Brennan, and R. L. Knight. February 2006. The Effects of Dogs on Wildlife Communities. Final research report submitted to Boulder County Open Space and Mountain Parks.
- Lima, S.L. and P.A. Bednekoff. 1999. Temporal variation in danger drives anti-predator behavior: the predation risk allocation hypothesis. *American Naturalist* 153:649-659.

FWS Form 3-2319  
02/06**FINDING OF APPROPRIATENESS OF A REFUGE USE****Refuge Name:** Presquile National Wildlife Refuge**Use:** Geocaching

This form is not required for wildlife-dependent recreational uses, take regulated by the State, or uses already described in a refuge CCP or step-down management plan approved after October 9, 1997.

<b>Decision Criteria:</b>	<b>YES</b>	<b>NO</b>
(a) Do we have jurisdiction over the use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b) Does the use comply with applicable laws and regulations (Federal, State, Tribal, and local)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(c) Is the use consistent with applicable Executive orders and Department and Service policies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d) Is the use consistent with public safety?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(e) Is the use consistent with goals and objectives in an approved management plan or other document?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(f) Has an earlier documented analysis not denied the use or is this the first time the use has been proposed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(g) Is the use manageable within available budget and staff?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(h) Will this be manageable in the future within existing resources?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(i) Does the use contribute to the public's understanding and appreciation of the refuge's natural or cultural resources, or is the use beneficial to the refuge's natural or cultural resources?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(j) Can the use be accommodated without impairing existing wildlife-dependent recreational uses or reducing the potential to provide quality (see section 1.6D, 603 FW 1, for description), compatible, wildlife-dependent recreation into the future?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Where we do not have jurisdiction over the use ["no" to (a)], there is no need to evaluate it further as we cannot control the use. Uses that are illegal, inconsistent with existing policy, or unsafe ["no" to (b), (c), or (d)] may not be found appropriate. If the answer is "no" to any of the other questions above, we will **generally** not allow the use.

If indicated, the refuge manager has consulted with State fish and wildlife agencies. Yes \_\_\_\_\_ No ☒.

When the refuge manager finds the use appropriate based on sound professional judgment, the refuge manager must justify the use in writing on an attached sheet and obtain the refuge supervisor's concurrence.

Based on an overall assessment of these factors, my summary conclusion is that the proposed use is:

**Not Appropriate** ☒**Appropriate** \_\_\_\_\_

Refuge Manager: \_\_\_\_\_ Date: \_\_\_\_\_

If found to be **Not Appropriate**, the refuge supervisor does not need to sign concurrence if the use is a new use.

If an existing use is found **Not Appropriate** outside the CCP process, the refuge supervisor must sign concurrence.

If found to be **Appropriate**, the refuge supervisor must sign concurrence:

Refuge Supervisor: \_\_\_\_\_ Date: \_\_\_\_\_

**A compatibility determination is required before the use may be allowed.**

## JUSTIFICATION FOR A FINDING OF APPROPRIATENESS OF A REFUGE USE

**Refuge Name:** Presquile National Wildlife Refuge

**Use:** Geocaching

### **NARRATIVE:**

To comply with 2006 U.S. Fish and Wildlife Service (Service) policy on appropriateness, all non-priority public uses for Presquile National Wildlife Refuge (Presquile NWR, the refuge) are being evaluated. Geocaching is not identified as a priority public use of the National Wildlife Refuge System under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57). This use is considered a general public use that is not a wildlife-dependent recreational use (as defined in the Improvement Act) and does not contribute to fulfillment of refuge purposes, goals, or objectives as described in current refuge management plans. In accordance with the Appropriate Use Policy (603 FW 1), general public uses are the lowest priorities for refuge managers to consider.

For the purpose of this finding of appropriateness we define geocaching as an activity that involves the placement of a physical “cache” (i.e., hidden items) in a location where other people subsequently search for the items. Geocaching will be prohibited on the refuge for several main reasons.

First, the abandonment of property, such as placing hidden items, is prohibited on national wildlife refuges under 50 C.F.R. 27.93.

Second, geocaching is not consistent with the goals and objectives for Presquile NWR, as defined in the comprehensive conservation plan for the refuge. These goals and objectives emphasize conserving habitats and species of conservation concern and providing priority, wildlife-dependent public uses. Geocaching also does not support the refuge’s purpose as an “involute sanctuary...for migratory birds.” Geocaching is not consistent with these goals and objectives and the refuge’s purpose because it can negatively impact migratory birds, other wildlife species, and the habitats they rely upon. The placement of hidden items encourages visitors to leave designated public use trails and enter into closed areas where public use is restricted. Impacts include habitat damage from the trampling of vegetation and disturbance to wildlife. For example, visitors walking off established public use trails may impact plants indirectly by compacting soils, increasing erosion, and walking on young plants, reducing survival and regeneration (Colorado State Parks 1998). Visitors can also negatively impact wildlife species by causing wildlife to shift habitat use, abandon habitat (e.g., leave and/or avoid areas frequented by humans), to abandon their nests, or increase energy demands (Knight and Cole 1991, Hammitt and Cole 1998). Also, humans walking off trail have been shown to cause greater disturbance (greater area of influence, flush distance, and distance moved) to wildlife than walking within trail corridors (Miller et al. 2001).

In summary, geocaching does not support a refuge purpose, goal, or objective; would not benefit the resources within the refuge; and would not contribute to visitors’ appreciation and understanding of the refuge or its resources. As such, allowing this use would divert resources (staff time and funding) away from our habitat and species management priorities and priority public uses. After evaluating geocaching under Service policies, this activity will not be allowed.

### **LITERATURE CITED:**

- Colorado State Parks. 1998. Planning trails with wildlife in mind: a handbook for trail planners prepared by Trails and Wildlife Task Force and Hellmund Associates. 51 pp. Accessed June 2012 at: <http://www.fs.fed.us/outdoors/naturewatch/start/planning/Trails-for-Wildlife-Handbk.pdf>.
- Hammitt, W.E. and D.N. Cole. 1998. Wildland Recreation. John Wiley & Sons, New York, 361pp.
- Knight, R.L. and D.N. Cole. 1991. Effects of recreational activity on wildlife in wildlands. Transactions of the 56th North American Wildlife and Natural Resources Conference pp.238-247.
- Miller, S. G., R. L. Knight, and C. K. Miller. 2001. Wildlife responses to pedestrians and dogs. Wildlife Society Bulletin 29(1): 124-132.

**FINDING OF APPROPRIATENESS OF A REFUGE USE****Refuge Name:** Presquile National Wildlife Refuge**Use:** Picnicking

This form is not required for wildlife-dependent recreational uses, take regulated by the State, or uses already described in a refuge CCP or step-down management plan approved after October 9, 1997.

<b>Decision Criteria:</b>	<b>YES</b>	<b>NO</b>
(a) Do we have jurisdiction over the use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b) Does the use comply with applicable laws and regulations (Federal, State, Tribal, and local)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(c) Is the use consistent with applicable Executive orders and Department and Service policies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d) Is the use consistent with public safety?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(e) Is the use consistent with goals and objectives in an approved management plan or other document?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(f) Has an earlier documented analysis not denied the use or is this the first time the use has been proposed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(g) Is the use manageable within available budget and staff?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(h) Will this be manageable in the future within existing resources?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(i) Does the use contribute to the public's understanding and appreciation of the refuge's natural or cultural resources, or is the use beneficial to the refuge's natural or cultural resources?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(j) Can the use be accommodated without impairing existing wildlife-dependent recreational uses or reducing the potential to provide quality (see section 1.6D, 603 FW 1, for description), compatible, wildlife-dependent recreation into the future?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Where we do not have jurisdiction over the use ["no" to (a)], there is no need to evaluate it further as we cannot control the use. Uses that are illegal, inconsistent with existing policy, or unsafe ["no" to (b), (c), or (d)] may not be found appropriate. If the answer is "no" to any of the other questions above, we will **generally** not allow the use.

If indicated, the refuge manager has consulted with State fish and wildlife agencies. Yes \_\_\_\_\_ No ☒.

When the refuge manager finds the use appropriate based on sound professional judgment, the refuge manager must justify the use in writing on an attached sheet and obtain the refuge supervisor's concurrence.

Based on an overall assessment of these factors, my summary conclusion is that the proposed use is:

**Not Appropriate** ☒**Appropriate** \_\_\_\_\_

Refuge Manager: \_\_\_\_\_ Date: \_\_\_\_\_

If found to be **Not Appropriate**, the refuge supervisor does not need to sign concurrence if the use is a new use.

If an existing use is found **Not Appropriate** outside the CCP process, the refuge supervisor must sign concurrence.

If found to be **Appropriate**, the refuge supervisor must sign concurrence:

Refuge Supervisor: \_\_\_\_\_ Date: \_\_\_\_\_

**A compatibility determination is required before the use may be allowed.**

## **JUSTIFICATION FOR A FINDING OF APPROPRIATENESS OF A REFUGE USE**

**Refuge Name:** Presquile National Wildlife Refuge

**Use:** Picnicking

### **NARRATIVE:**

To comply with 2006 U.S. Fish and Wildlife Service (Service) policy on appropriateness, all non-priority public uses for Presquile National Wildlife Refuge (Presquile NWR, the refuge) are being evaluated. Picnicking is not identified as a priority public use of the National Wildlife Refuge System under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57). This use is considered a general public use that is not a wildlife-dependent recreational use (as defined in the Improvement Act) and does not contribute to fulfillment of refuge purposes, goals, or objectives as described in current refuge management plans. In accordance with the Appropriate Use Policy (603 FW 1), general public uses are the lowest priorities for refuge managers to consider. Picnicking has previously been found to be inappropriate for the Presquile NWR in 2007. Picnicking will continue to not be allowed on Presquile NWR for several main reasons.

First, allowing picnicking is not consistent with the goals and objectives for Presquile NWR, as outlined in the refuge's comprehensive conservation plan. These goals emphasize conserving habitats and species of conservation concern. Picnicking also does not support the refuge's purpose as an "involute sanctuary... for migratory birds." Allowing picnicking could negatively impact migratory birds, other wildlife species, and habitats by causing soil compaction and vegetation trampling, increasing the frequency and extent of wildlife disturbance, and introducing trash and food waste which could result in wildlife conflicts, feeding of wildlife, and potential death to wildlife who ingest trash and food waste.

Second, the refuge does not have adequate staff, resources, or facilities to administer this use. The refuge does not provide the amenities for picnicking activities, such as picnic tables, shelters, trash containers, or grills. In addition, the refuge does not have the resources to manage a picnic area or program. Due to the logistics and safety of transportation to and from this island refuge, it would detract from refuge staff's responsibilities to protect and manage fish, wildlife, and plants and their habitats, as well as detracting from administering priority uses. The workload for the maintenance and other staff would increase. Law enforcement duties would also increase to ensure compliance. While it is listed in an approved 1991 Public Use Management Plan, this plan is outdated and will be revised subsequent to the refuge's comprehensive conservation plan.

In summary, picnicking does not support a refuge purpose, goal, or objective; would not benefit the resources within the refuge; and would not contribute to visitors' appreciation and understanding of the refuge and its resources. As such, allowing this use would divert resources (staff time and funding) away from our habitat and species management priorities and priority public uses.

Although organized picnicking is prohibited, this does not preclude visitors from bringing food with them for nutrition or safety while they participate in other appropriate and compatible activities on the refuge.

**FINDING OF APPROPRIATENESS OF A REFUGE USE****Refuge Name:** Presquile National Wildlife Refuge**Use:** Swimming and Sunbathing

This form is not required for wildlife-dependent recreational uses, take regulated by the State, or uses already described in a refuge CCP or step-down management plan approved after October 9, 1997.

<b>Decision Criteria:</b>	<b>YES</b>	<b>NO</b>
(a) Do we have jurisdiction over the use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b) Does the use comply with applicable laws and regulations (Federal, State, Tribal, and local)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(c) Is the use consistent with applicable Executive orders and Department and Service policies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d) Is the use consistent with public safety?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(e) Is the use consistent with goals and objectives in an approved management plan or other document?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(f) Has an earlier documented analysis not denied the use or is this the first time the use has been proposed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(g) Is the use manageable within available budget and staff?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(h) Will this be manageable in the future within existing resources?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(i) Does the use contribute to the public's understanding and appreciation of the refuge's natural or cultural resources, or is the use beneficial to the refuge's natural or cultural resources?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(j) Can the use be accommodated without impairing existing wildlife-dependent recreational uses or reducing the potential to provide quality (see section 1.6D, 603 FW 1, for description), compatible, wildlife-dependent recreation into the future?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Where we do not have jurisdiction over the use ["no" to (a)], there is no need to evaluate it further as we cannot control the use. Uses that are illegal, inconsistent with existing policy, or unsafe ["no" to (b), (c), or (d)] may not be found appropriate. If the answer is "no" to any of the other questions above, we will **generally** not allow the use.

If indicated, the refuge manager has consulted with State fish and wildlife agencies. Yes \_\_\_\_\_ No ☒.

When the refuge manager finds the use appropriate based on sound professional judgment, the refuge manager must justify the use in writing on an attached sheet and obtain the refuge supervisor's concurrence.

Based on an overall assessment of these factors, my summary conclusion is that the proposed use is:

**Not Appropriate** ☒**Appropriate** \_\_\_\_\_

Refuge Manager: \_\_\_\_\_ Date: \_\_\_\_\_

If found to be **Not Appropriate**, the refuge supervisor does not need to sign concurrence if the use is a new use.

If an existing use is found **Not Appropriate** outside the CCP process, the refuge supervisor must sign concurrence.

If found to be **Appropriate**, the refuge supervisor must sign concurrence:

Refuge Supervisor: \_\_\_\_\_ Date: \_\_\_\_\_

**A compatibility determination is required before the use may be allowed.**



## **JUSTIFICATION FOR A FINDING OF APPROPRIATENESS OF A REFUGE USE**

**Refuge Name:** Presquile National Wildlife Refuge

**Use:** Swimming and Sunbathing

### **NARRATIVE:**

To comply with 2006 U.S. Fish and Wildlife Service (Service) policy on appropriateness, all non-priority public uses for Presquile National Wildlife Refuge (Presquile NWR, the refuge) are being evaluated. Swimming and sunbathing are not identified as a priority public use of the National Wildlife Refuge System under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57). This use is considered a general public use that is not a wildlife-dependent recreational use (as defined in the Improvement Act) and does not contribute to fulfillment of refuge purposes, goals, or objectives as described in current refuge management plans. In accordance with the Appropriate Use Policy (603 FW 1), general public uses are the lowest priorities for refuge managers to consider. Swimming and sunbathing will not be allowed on the refuge for several main reasons.

First, allowing swimming and sunbathing is not consistent with public safety. The refuge's shoreline along the Turkey Island Cutoff channel are high (20 feet) bluffs of unconsolidated and largely unvegetated sand, gravel, and clays that have been eroding into the river over the years and pose a safety concern for visitors.

Second, allowing swimming and sunbathing does not support any of the goals and objectives for Presquile NWR, as outlined in the comprehensive conservation plan for the refuge. These goals and objectives emphasize conserving habitats and wildlife species of conservation concern. Swimming and sunbathing also do not support the refuge's purpose as an "involute sanctuary...for migratory birds." Allowing swimming and sunbathing could negatively impact sensitive habitats, migratory birds, and other wildlife species because the eroding banks and the surrounding tidal marshes are inhabited by plants and wildlife that are sensitive to human disturbance.

Swimming and sunbathing will be prohibited on the refuge. Swimming and sunbathing are not consistent with Service policy on secondary uses and is not consistent with any approved refuge management plan. Also, swimming and sunbathing do not support a refuge purpose, goal, or objective; would not benefit the resources within the refuge; and would not contribute to visitors' understanding and appreciation of the refuge and its resources. As such, allowing this use would divert resources (staff time and funding) away from our habitat and species management priorities and priority public uses. Also, ample swimming and sunbathing opportunities exist within the Richmond metropolitan area.

**FINDING OF APPROPRIATENESS OF A REFUGE USE****Refuge Name:** Presquile National Wildlife Refuge**Use:** Research by Non-Service personnel

This form is not required for wildlife-dependent recreational uses, take regulated by the State, or uses already described in a refuge CCP or step-down management plan approved after October 9, 1997.

<b>Decision Criteria:</b>	<b>YES</b>	<b>NO</b>
(k) Do we have jurisdiction over the use?	<input checked="" type="checkbox"/>	
(l) Does the use comply with applicable laws and regulations (Federal, State, Tribal, and local)?	<input checked="" type="checkbox"/>	
(m) Is the use consistent with applicable Executive orders and Department and Service policies?	<input checked="" type="checkbox"/>	
(n) Is the use consistent with public safety?	<input checked="" type="checkbox"/>	
(o) Is the use consistent with goals and objectives in an approved management plan or other document?	<input checked="" type="checkbox"/>	
(p) Has an earlier documented analysis not denied the use or is this the first time the use has been proposed?	<input checked="" type="checkbox"/>	
(q) Is the use manageable within available budget and staff?	<input checked="" type="checkbox"/>	
(r) Will this be manageable in the future within existing resources?	<input checked="" type="checkbox"/>	
(s) Does the use contribute to the public's understanding and appreciation of the refuge's natural or cultural resources, or is the use beneficial to the refuge's natural or cultural resources?	<input checked="" type="checkbox"/>	
(t) Can the use be accommodated without impairing existing wildlife-dependent recreational uses or reducing the potential to provide quality (see section 1.6D, 603 FW 1, for description), compatible, wildlife-dependent recreation into the future?	<input checked="" type="checkbox"/>	

Where we do not have jurisdiction over the use ["no" to (a)], there is no need to evaluate it further as we cannot control the use. Uses that are illegal, inconsistent with existing policy, or unsafe ["no" to (b), (c), or (d)] may not be found appropriate. If the answer is "no" to any of the other questions above, we will **generally** not allow the use.

If indicated, the refuge manager has consulted with State fish and wildlife agencies. Yes ☒ No ☐.

When the refuge manager finds the use appropriate based on sound professional judgment, the refuge manager must justify the use in writing on an attached sheet and obtain the refuge supervisor's concurrence.

Based on an overall assessment of these factors, my summary conclusion is that the proposed use is:

**Not Appropriate** \_\_\_\_\_ **Appropriate** ☒

Refuge Manager: \_\_\_\_\_ Date: \_\_\_\_\_

If found to be **Not Appropriate**, the refuge supervisor does not need to sign concurrence if the use is a new use.

If an existing use is found **Not Appropriate** outside the CCP process, the refuge supervisor must sign concurrence.

If found to be **Appropriate**, the refuge supervisor must sign concurrence:

Refuge Supervisor: \_\_\_\_\_ Date: \_\_\_\_\_

**A compatibility determination is required before the use may be allowed.**



## **JUSTIFICATION FOR A FINDING OF APPROPRIATENESS OF A REFUGE USE**

**Refuge Name:** Presquile National Wildlife Refuge

**Use:** Research by Non-Service personnel

### **NARRATIVE:**

Research conducted by non-U.S. Fish and Wildlife Service (Service) personnel is not identified as a priority public use of the National Wildlife Refuge System under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the National Wildlife Refuge System Improvement Act of 1997. This use is not a priority public use of the National Wildlife Refuge System (Refuge System). However, research by non-Service personnel is often conducted by colleges and universities; Federal, State, and local agencies; nongovernmental organizations; and qualified members of the general public. Research on Presquile National Wildlife Refuge (Presquile NWR, the refuge) would further the understanding of the natural environment and could be applied to the management of refuge wildlife. Research by others outside of the Service adds greatly to the information base for refuge managers to make informed decisions.

All research proposals are evaluated for their benefits to the refuge and the Refuge System mission. The refuge manager will issue a special use permit for all approved research projects. All research projects require the principal investigator to provide summary reports of findings and acknowledge the refuge for their participation. The refuge reserves the right at any time to find a specific request for a research project by non-Service personnel to be inappropriate or incompatible with the refuge's purposes, Service mission or the refuge's conservation management goals and objective established in the CCP and any stepped down management plan, based on each individual review and assessment of each project's research details.

Not all research may be appropriate. Some research may affect fish, wildlife, and plants in a manner neither consistent with refuge management plans nor compatible with refuge purposes or the Refuge System mission. Some research may interfere with or preclude refuge management activities, appropriate and compatible public uses, or other research. Some research may be appropriate off the refuge, but not on the refuge. For example, some natural and physical research may not be wildlife-dependent and may be accomplished successfully at locations off the refuge. Because not all research supports the establishing purposes of refuges or the Refuge System mission, we cannot define research as a refuge management activity. Therefore, we must evaluate each research proposal independently and may deny a request for a special use permit because we find the proposal to be inappropriate or incompatible.

Certain common research activities are evaluated explicitly in the compatibility determination. Any request for research would require issuance of a special use permit issued by the Service. At the time of request, a determination will be made by refuge staff whether the research benefits the understanding of the natural environment and will contribute useful information to the Service and Refuge System. The entire refuge may be open and available for scientific research. An individual research project is usually limited to a particular habitat type, plant or wildlife species. On occasion, research projects will encompass an assemblage of habitat types, plants, or wildlife. The research location will be limited to those areas of the refuge that are absolutely necessary to conduct of the research project.

The timing of the research will depend entirely on the individual research projects approved design. Scientific research would be allowed to occur on the refuge throughout the year. An individual research project could be short term in design, requiring one or two visits over the course of a few days. Other research projects could be multiple year studies that require daily visits to the study site. The timing of each individual research project will be limited to the minimum required to complete the project. Certain common research activities are described explicitly in the compatibility determination.

The methods of the research will depend entirely on the individual research project that is conducted. The methods of each research project will be scrutinized well before it will be allowed to occur on the refuge. No research project will be allowed to occur if it does not have an approved scientific method, causes considerable negative impacts on wildlife and habitat, or compromises public health and safety. Certain common research activities are described explicitly in the compatibility determination.

Presquile NWR is an unstaffed satellite refuge administered by the Eastern Virginia Rivers NWR Complex. No additional equipment, facilities, or improvements will be necessary to allow research by non-Service personnel. Staff time would be required to review research proposals and oversee permitted projects. Conducting these activities will require less than 10 percent of a work-year for one staff member.

Disturbance to wildlife and vegetation by researchers could occur through observation and accessing the study area by foot. It is possible that direct mortality could result as a byproduct of research activities. Mist-netting for example, can cause stress, especially when birds are captured, banded, and weighed. There have been occasional mortalities to birds, namely when predators, such as raccoons and cats, reach the netted birds before researchers do.

Minimal impacts may occur when previously approved research projects are carried out according to the stipulations stated in the special use permit issued for each project. Overall, however, allowing well-designed and properly reviewed research to be conducted by non-Service personnel is likely to have very little impact on refuge wildlife populations. If the research project is conducted with professionalism and integrity, potential adverse impacts are likely to be outweighed by the knowledge gained about a species, habitat, or public use.

After evaluating research by non-Service personnel under Service policies, we conclude that the activity is appropriate as it contributes to and supports refuge management, purposes, and goals, and the mission of the Refuge System.

## **COMPATIBILITY DETERMINATION**

### **USE:**

Research by Non-Service Personnel

### **REFUGE NAME:**

Presquile National Wildlife Refuge

### **ESTABLISHING AND ACQUISITION AUTHORITY(IES):**

Presquile National Wildlife Refuge (Presquile NWR, refuge) was established on March 7, 1953, under the Migratory Bird Conservation Act (16 U.S.C. 715d) of February 18, 1929 (45 Stat. 1222) authority to “(2) acquire, by gift or devise, any area or interests therein” that the Secretary of the Interior “determines to be suitable for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.” The tract was gifted from A.D. Williams for use as a wildlife refuge in 1952.

### **REFUGE PURPOSE(S):**

In accordance with the Migratory Bird Conservation Act, the purpose of Presquile NWR is “...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.”

### **NATIONAL WILDLIFE REFUGE SYSTEM MISSION:**

The mission of the National Wildlife Refuge System (Refuge System) is “to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans” (National Wildlife Refuge System Administration Act of 1966 [16 U.S.C. 668dd-668ee], as amended by the National Wildlife Refuge System Improvement Act of 1997 [NWRSIA][Public Law 105-57]).

### **DESCRIPTION OF USE:**

#### **(a) What is the use? Is it a priority public use?**

The use is research conducted by non-U.S. Fish and Wildlife Service (Service) personnel. This use includes research conducted by Federal, state, and private entities, such as the U.S. Geological Survey, State departments of natural resources, students and professors at State and private universities, and independent non-government researchers and contractors. Research conducted by non-Service personnel is not a priority public use of the Refuge System under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57).

Although this use is not a priority public use, this activity would allow permitted researchers access to the refuge’s natural environment to conduct both short-term and long-term research projects.

The refuge issues special use permits allowing non-destructive research studies that investigate biological, physical, and/or social issues and concerns to address refuge management information needs, or enhance understanding of trust resources. We define non-destructive research as research that does not permanently harm or kill individual fish and wildlife, does not permanently adversely affect fish or wildlife populations, and not permanently altering habitat. The following four specific, ongoing research projects are specifically covered under this compatibility determination (CD):

1. The Christmas Bird Count, a volunteer-based winter bird survey, conducted by the Hopewell Chapter of the National Audubon Society
2. American black duck (*Anas rubripes*) population monitoring research conducted by the Virginia Department of Game and Inland Fisheries (VDGIF) and the Atlantic Coast Joint Venture (ACJV).
3. Breeding study of prothonotary warblers (*Protonotaria citrea*) conducted by Virginia Commonwealth University (VCU)
4. Amphibian and reptile survey and health assessments conducted by the Virginia Herpetological Society (VHS)

Additional requests for special use permits for research will be considered on a case-by-case basis, as staff availability allows. In accordance with 16 U.S.C. 668dd(d) and 50 C.F.R. Part 25, Subpart D, the refuge manager is responsible for reviewing applications for special use permits and determining whether to authorize a proposed use. Prior to being approved, the refuge manager must first find the use “appropriate,” and then “compatible” with the refuge purposes and Refuge System mission.

The refuge manager will base the decision to issue a special use permit for research on his or her professional judgment and the value of the proposed research. The decision to allow a particular research project will also be consistent with Service regulations and policy, including the Policy on Maintaining the Biological Integrity, Diversity, and Environmental Health of the Refuge System (66 Fed. Reg. 3810 (2001); 601 FW 3). The results of the research should result in better knowledge of our natural resources and improve methods to manage, monitor, and protect the refuge’s biological resources and public uses.

The refuge manager will always have the discretion to deny or reevaluate the appropriateness and compatibility of any specific “research by non-Service personnel” request at any time [603 FW 2.1 H(1), (2)]. The refuge manager may deny a project based on his or her sound professional judgment based on field experiences, knowledge of the refuge’s natural resources, particularly its biological resources, available scientific information, and after consulting with other experts, both inside and outside the Service.

When denying a request for a specific research project, the refuge manager will explain the rationale and conclusions supporting their decision in writing. The rationale for the denial will be consistent with the principles of sound fish and wildlife management, refuge administration, and applicable laws. The denial will generally be based on evidence that the details of a particular research project might lead to the impairment of our conservation mission, detracts from fulfilling the refuge’s purposes, conflicts with the conservation goals or objectives in an approved refuge management plans, is not manageable with the available budget or staff time, is inconsistent with public safety, or conflicts with maintaining or restoring the biological integrity, diversity, and environmental health of the refuge’s habitats involved in the research project.

**(b) Where would the use be conducted?**

The location of the research will vary depending on the individual research project that is being conducted. The entire refuge may be made available for scientific research. An individual research project is usually limited to a particular habitat type, plant, or wildlife species. Occasionally, research projects will encompass an assemblage of habitat types, plants, or wildlife, or may span more than one refuge or include lands outside the Refuge System. The research location will also be limited to those areas of the refuge that are absolutely necessary to conduct the research project. The refuge may limit areas available to research as necessary to ensure the protection of trust resources or reduce conflict with other compatible refuge uses. Access to study locations will be identified by refuge staff.

The following list provides more details on where the four research projects specifically covered under this CD will occur:

- Christmas Bird Count – Research occurs in all habitat types throughout the refuge.
- VDGIF and ACJV’s American black duck research – Research occurs in swamp and interior creeks on the refuge.
- VCU’s prothonotary warbler research – Research occurs along forested riparian areas along two refuge channels.

- VHS's amphibian and reptile survey and health assessments- Research and surveys occur primarily in the refuge's forested riparian areas and wetlands along the James River.

**(c) When would the use be conducted?**

The timing of the research will depend on the individual research project's approved design. Scientific research may be allowed to occur on the refuge throughout the year, when there are no time-of-year restrictions. Time-of-year restrictions ensure compliance with purposes for which the refuge was established; and specifically, to protect threatened or endangered species and species of concern, and to prevent conflicts with other refuge public uses (e.g., public deer hunt) or management activities (e.g., prescribed burn). Special precautions will be required and enforced to ensure the researchers' health and safety and to minimize or eliminate potential conflicts with a priority public use.

An individual research project could be short-term in design, requiring one or two visits over the course of a few days. Other research projects could be multiple year studies that require daily visits to the study site. The timing of each individual research project will be limited to the minimum required to complete the project.

The following list provides more details on when the four research projects specifically covered under this CD will occur:

- Christmas Bird Count – Annually; one day during early winter.
- VDGIF and ACJV's American black duck research – Annually since 2010; during late winter (January through the end of February).
- VCU's prothonotary warbler research – Annually (starting in 1987); during the breeding season.
- VHS's amphibian and reptile survey and health assessments- Annually since about 2006; typically two to three visits during late spring and summer (May through July).

**(d) How would the use be conducted?**

The methods of the research will depend entirely on the individual research project that is conducted. The methods of each research project will be reviewed and scrutinized before it will be allowed to occur on the refuge. No research project will be allowed to occur if:

- It does not have an approved scientific method;
- It negatively impacts endangered species, migratory birds, and other refuge trust resources; or
- It compromises public health and safety.

A research application (FWS Form 3-1383-R: National Wildlife Refuge System Research and Monitoring Special Use Application and Permit) and detailed research proposal that follows Presquile NWR study proposal guidelines (see attachment I) will be required from parties interested in conducting research on the refuge.

Once approved, projects will be reviewed annually to ensure that they are meeting their intended purposes and are fulfilling the mission of the Refuge System and purposes for which the refuge was established.

The following list provides more details on how the four research projects specifically covered under this CD will occur:

- Christmas Bird Count – Volunteer field observations (point counts) of birds wintering on the refuge.
- VDGIF and ACJV's American black duck research – Researchers capture black ducks using cannon nets and then band, and record vital rates of individuals. Researchers then use bands to help track movement of individuals.
- VCU's prothonotary warbler research – Researchers monitor over 283 artificial nest boxes on the refuge, including observing nesting activity and weighing, measuring, banding, and taking blood samples (to test for parasites and mercury levels) of nestlings.



- VHS's amphibian and reptile survey and health assessments- Researchers survey observe and record observations of amphibians and reptiles using cover boards, drift fences, funnel and pitfall traps. Some individuals are also examined for evidence of parasites, infections, lesions, or deformities, which may include taking blood samples, conducting biopsies on lesions, and pit tagging individuals before releasing them.

**(e) Why is this use being proposed?**

Research by non-Service personnel is conducted by colleges, universities, Federal, State, and local agencies, non-governmental organizations, and qualified members of the general public to further the understanding of the natural environment and to improve the management of the refuge's natural resources. Much of the information generated by the research is applicable to management on and near the refuge. In many cases, research by non-Service personnel ensures the perception of un-biased and objective information gathering which can be important when using the research to develop management recommendations for politically sensitive issues. Additionally, universities and other Federal partners can access equipment and facilities unavailable to refuge staff for analysis of data or biological samples.

The Service will encourage and support research and management studies on refuge lands that will improve and strengthen natural resource management decisions. The refuge manager will encourage and seek research relative to approved refuge objectives that clearly improves land management and promotes adaptive management. Priority research addresses information that will better manage the Nation's biological resources and is generally considered important to: agencies of the Department of Interior; the Service, the Refuge System, and state fish and game agencies. Priority research also addresses important management issues or demonstrates techniques for management of species or habitats.

The refuge will also consider research for other purposes which may not be directly related to refuge-specific objectives, but contribute to the broader enhancement, protection, use, preservation, and management of native populations of fish, wildlife, and plants, and their natural diversity within the region or flyway. The refuge will maintain a list of research needs that will be provided to prospective researchers or organizations upon request. Refuge support of research directly related to refuge objectives may take the form of funding, in-kind services such as housing or use of other facilities, direct staff assistance with the project in the form of data collection, provision of historical records, conducting management treatments, or other assistance as appropriate.

Research was first determined to be a compatible use on the refuge in June 1994. The refuge manager renewed the determination that research is an appropriate and compatible use on Presquile NWR in a finding of appropriateness, signed on December 7, 2006, and a compatibility determination signed on February 22, 2007. All research proposals are unique and require individual review and consideration. One example of a research project conducted by non-Service personnel found to be compatible at Presquile NWR is a long-term study of the reproductive activities and success of prothonotary warblers along the James River. Researchers from the Virginia Commonwealth University's Rice Center have been studying these neotropical migratory birds at Presquile NWR, adjacent non-NWR sites in Virginia, and in Panama since 1987. The research effort has resulted in publication of 12 manuscripts in scientific journals, 5 graduate theses, and 8 undergraduate research projects. This research has significantly contributed to the body of scientific knowledge about this species' breeding ecology, feeding behaviors, and parasite burden, as well as offering clues about how climate change may affect this species.

**AVAILABILITY OF RESOURCES:**

The bulk of the cost for research is incurred in staff time to review research proposals, coordinate with researchers and write special use permits. In some cases, a research project may only require one day of staff time to write a special use permit. In other cases, a research project may take an accumulation of weeks, as the refuge biologist must coordinate with students and advisors and accompany researchers during site visits. Because research conducted on the refuge is not constant, there may be fiscal years when little if any time is spent on managing outside research projects by refuge staff. This support includes review of the proposal by the refuge manager and biologist, consultation and coordination with principal researcher and field staff, issuance of special use permit, review of progress reports and other daily operational communications (table B.1).

**Table B.1. Current Annual Administrative Costs Associated with Research by Non-Service Personnel**

Activities	Resource	Annual Duration	Rate <sup>1</sup>	Cost
Proposal review, coordination, and SUP preparation	Refuge Manager (GS-13)	4 hours	\$50 / hour	\$200
	Deputy Refuge Manager (GS-12)	4 hours	\$42 / hour	\$168
	Wildlife Biologist (GS-11)	8 hours	\$35 / hour	\$280
	Wildlife Refuge Specialist (GS-11)	8 hours	\$35 / hour	\$280
Field assistance, evaluating resource impacts	Wildlife Refuge Specialist (GS-11)	10 hours	\$35 / hour	\$350
	Wildlife Biologist (GS-11)	20 hours	\$35 / hour	\$700
Use of facilities		40 days	\$5 / day	\$200
Use of equipment	Vehicle or watercraft	4 days	\$20 / day	\$80
<b>TOTAL</b>				<b>\$2,258</b>

*Note: Some actions and resulting costs also support approved public uses (i.e., hunt program).*

<sup>1</sup> In 2012 dollars, full performance salary at GS-Step 6 or WG-Step 3.

Based on existing refuge expenditures for habitat management, funding is adequate to ensure compatibility and to administer and manage the subject use.

### **ANTICIPATED IMPACTS OF THE USE:**

#### *Short-term impacts:*

Research activities may disturb fish and wildlife and their habitats. For example, the presence of researchers can cause waterfowl to flush from resting and feeding areas, cause disruption of birds on nests or breeding territories, or increase predation on nests and individual animals as predators follow human scent or trails. Efforts to capture animals, such as for migratory bird banding, can cause disturbance, injury, or death to groups of wildlife or to individuals. To wildlife, the energy cost of disturbance may be appreciable in terms of disruption of feeding, displacement from preferred habitat and the added energy expended to avoid disturbance.

The removal of vegetation or sediments by core sampling methods, a common method for use in wetland research, can cause increased localized turbidity and disrupt non-target plants and animals. Sampling activities associated with many types of research activities can cause compaction of soils and the trampling of vegetation. Installation of posts, equipment platforms, collection devices and other research equipment in open water may present a hazard if said items are not adequately marked and/or removed at appropriate times or upon completion of the project. Research efforts may also discover methods that result in a reduction in impacts described above.

The potential for user conflicts is minimal with research projects conducted on the refuge. Generally, most research occurs within areas closed to other uses and away from public use trails and facilities. During hunting seasons, hunters may encounter researchers in the field, or observe monitoring plots or other research infrastructure. However, these encounters will be infrequent due to the typically minimal presence of field technicians and interest in maintaining low profile infrastructure to prevent disturbance or vandalism of study sites.

#### *Long-term impacts:*

Long-term effects should generally be beneficial by gaining information valuable to refuge management. No long-term negative impacts are expected from the research activities described. The refuge manager can reduce the likelihood of long-term impacts by denying special use permits for research that is likely to cause long-term, adverse impacts. Also, permits for multi-year research projects are renewed annually, providing the opportunity for an analysis of any impacts before renewing the special use permit.

*Cumulative impacts:*

Cumulative impacts would occur if multiple research projects were occurring on the same resources at the same time or if the duration of the research is excessive. In particular, the refuge must consider the potential impacts of non-Service research, in conjunction with any Service-sponsored research also taking place. However, no cumulative impacts are expected because refuge manager can control the potential for cumulative impacts through special use permits, prohibiting multiple research projects from affecting any given area or species at one time. The refuge manager retains the option to deny proposals for research on that does not contribute to the mission of the Refuge System or causes undue disturbance or harm to refuge resources. The refuge manager also retains the right to revoke or deny renewal for any special use permit if unanticipated short-term, long-term, or cumulative impacts occur.

Project-specific stipulations outlined in each special use permit will act to minimize anticipated impacts of research projects. These stipulations will prevent impacts to refuge wetlands, water quality, soils, hydrology, fish, wildlife, or habitat. Projects which occur within the habitat of, or include direct monitoring of, threatened and endangered species will be subject to a Section 7 informal consultation with the Service's Virginia Field Office under the Endangered Species Act (87 Stat. 854, as amended; 16 U.S.C. 1531 et seq.). Only with the approval of the Section 7 consultation will the refuge permit research to be conducted on habitats or individuals of threatened and endangered species. Research that could adversely affect critical habitat or threatened and endangered wildlife will not be permitted.

**PUBLIC REVIEW AND COMMENT:**

As part of the comprehensive conservation planning process for Presquile NWR, this compatibility determination will undergo extensive public review, including a comment period of at least 30 days following the release of the draft comprehensive conservation plan and environmental assessment.

**DETERMINATION (CHECK ONE BELOW):**

- ☐ Use is not compatible
- ☒ Use is compatible, with the following stipulations

**STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:**

- The criteria for evaluating a research proposal, outlined in the "Description of Use" section above, will be used when determining whether a proposed study will be approved on the refuge. If proposed research methods are evaluated and determined to have potential adverse impacts on refuge wildlife or habitat, then the refuge would determine the utility and need of such research to conservation and management of refuge wildlife and habitat. If the need was demonstrated by the research permittee and accepted by the refuge, then measures to minimize potential impacts (e.g., reduce the numbers of researchers entering an area, restrict research in specified areas) would be developed and included as part of the study design and on the special use permit. Special use permits will contain specific terms and conditions that the researcher(s) must follow relative to activity, location, duration, and time-of-year restrictions to ensure continued compatibility. All refuge rules and regulations must be followed unless alternatives are otherwise accepted in writing by refuge management.
- The Service will require all researchers to submit FWS Form 3-1383-R: National Wildlife Refuge System Research and Monitoring Special Use Application and Permit (<http://www.fws.gov/forms/3-1383-R.pdf>; accessed May 2012) and a detailed research proposal that follows Presquile NWR study proposal guidelines (see attachment I) and Service Policy (FWS Refuge Manual Chapter 4, Section 6). Researchers must give us at least 45 days to review proposals before the research begins. If the research involves the collection of wildlife, the refuge must be given 60 days to review the proposal. Researchers must obtain all necessary scientific collecting or other permits before starting the research. We will prioritize and approve proposals based on the need, benefit, compatibility, and funding required for the research.
- The refuge manager or his designee will issue special use permit for all research conducted by non-Service personnel. The special use permit will list all conditions necessary to ensure compatibility. The special use permit will also identify a schedule for annual progress reports and the submission of a final report or scientific paper.



- Refuge staff may ask our regional refuge biologists, other Service divisions, State agencies, or academic experts to review and comment on proposals. We will require all researchers to obtain appropriate State and Federal permits.
- Extremely sensitive wildlife habitat areas would be avoided unless sufficient protection from research activities (i.e., disturbance, collection, capture, and handling) is implemented to limit the area and/or wildlife potentially impacted by the proposed research. Where appropriate, some areas may be temporarily or seasonally closed so that research would be permitted when impacts to wildlife and habitat are less of a concern. Research activities will be modified to avoid harm to sensitive wildlife and habitat when unforeseen impacts arise.
- Any research project may be terminated at any time for non-compliance with the special use permit conditions. Research projects may also be modified, redesigned, relocated, or terminated at any time upon determination by the refuge manager that the project is causing unanticipated adverse impacts to wildlife, wildlife habitat, approved priority public uses, or other refuge management activities. Refuge staff will conduct annual reviews of the research project to monitor researcher activities for potential impacts to the refuge and for compliance with conditions on the special use permit. The refuge manager may terminate previously approved research and special use permits if adverse impacts are observed or if the researcher is not in compliance with the stated conditions.
- The Service expects researchers to submit a final report to the refuge upon completing their work. For long-term studies, we may also require interim progress reports. We also expect that research will be published in peer-reviewed publications. All reports, presentations, posters, articles, or other publications will acknowledge the Refuge System and Presquile NWR as partners in the research.

### **JUSTIFICATION:**

The Service encourages research on national wildlife refuges to collect new information which will improve the quality of refuge and other Service management decisions, to expand the body of scientific knowledge about fish and wildlife, their habitats, the use of these resources, appropriate resource management, and the environment in general, and to provide the opportunity for students and others to learn the principles of field research.

In accordance with 50 CFR 26.41, research conducted by non-Service personnel, as described in this compatibility determination, will not materially interfere with, or detract from, the fulfillment of the Refuge System mission or the purposes for which the refuge was established.

**SIGNATURE:**      Refuge Manager: \_\_\_\_\_  
(Signature and Date)

**CONCURRENCE:**      Regional Chief: \_\_\_\_\_  
(Signature and Date)

**MANDATORY 10 YEAR RE-EVALUATION DATE:** \_\_\_\_\_

### **LITERATURE CITED:**

U.S. Fish and Wildlife Service. 1999. Director's Order No. 109: Use of Specimens Collected on Fish and Wildlife Lands. March 30, 1999.

## **ATTACHMENT I**

### *Presquile National Wildlife Refuge Study Proposal Guidelines*

A study proposal is a justification and description of the work to be done, and includes cost and time requirements. The proposals must be specific enough to serve as blueprints for the investigation. They must spell out in advance systematic plans for the investigation at a level of detail commensurate with the cost and scope of the project and the needs of management. Please submit proposals electronically as a Microsoft® Word® document or hard copy to the refuge manager.

The following list provides a general outline of first-order headings/sections for study proposals.

- Cover Page
- Table of Contents (for longer proposals)
- Abstract
- Statement of Issue
- Literature Summary
- Objectives/Hypotheses
- Study Area
- Methods and Procedures
- Quality Assurance/Quality Control
- Specimen Collections
- Deliverables
- Special Requirements, Concerns, Necessary Permits
- Literature Cited
- Peer Review
- Budget
- Personnel and Qualifications

#### *Cover Page*

The cover page must contain the following information.

- Title of proposal
- Current date
- Investigator(s)—name, title, organizational affiliation, address, telephone and fax numbers and e-mail address of all investigators or cooperators
- Proposed starting date
- Estimated completion date
- Total funding support requested from the U.S. Fish and Wildlife Service
- Signatures of principal investigator(s) and other appropriate institutional officials

#### *Abstract*

The abstract should contain a short summary description of the proposed study, including reference to major points in the sections “Statement of Issue,” “Objectives,” and “Methods and Procedures.”

#### *Statement of Issue*

Provide a clear precise summary of the problem to be addressed and the need for its solution. This section should include statements of the importance, justification, relevance, timeliness, generality, and contribution of the study. Describe how any products will be used, including any anticipated commercial use. What is the estimated probability of success of accomplishing the objective(s) within the proposed timeframe?

#### *Literature Summary*

This section should include a thorough but concise literature review of current and past research that pertains to the proposed research, especially any pertinent research conducted at the Presquile National Wildlife Refuge. A discussion of relevant legislation, policies, and refuge planning and management history, goals, and objectives should also be included.

### *Objectives/Hypotheses*

A very specific indication of the proposed outcomes of the project should be stated as objectives or hypotheses to be tested. Project objectives should be measurable. Provide a brief summary of what information will be provided at the end of the study and how it will be used in relation to the problem. These statements should flow logically from the statement of issue and directly address the management problem.

Establish data quality objectives in terms of precision, accuracy, representativeness, completeness, and comparability as a means of describing how good the data need to be to meet the project's objectives.

### *Study Area*

Provide a detailed description of the geographic area(s) to be studied and include a clear map delineating the proposed study area(s) and showing specific locations where work will occur.

### *Methods and Procedures*

This section should describe as precisely as possible, how the objectives will be met or how the hypotheses will be tested. Include detailed descriptions and justifications of the field and laboratory methodology, protocols, and instrumentation. Explain how each variable to be measured directly addresses the research objective/hypothesis. Describe the experimental design, population, sample size, and sampling approach (including procedures for sub-sampling). Summarize the statistical and other data analysis procedures to be used. List the response variables and tentative independent variables or covariates. Describe the experimental unit(s) for statistical analysis. Also include a detailed project time schedule that includes start, fieldwork, analysis, reporting, and completion dates.

### *Quality Assurance/Quality Control*

Adequate quality assurance/quality control procedures help ensure that data and results are:

- Credible and not an artifact of sampling or recording errors;
- Of known quality;
- Able to stand up to external scientific scrutiny; and
- Accompanied by detailed method documentation.

Describe the procedures to be used to ensure that data meet defined standards of quality and program requirements, errors are controlled in the field, laboratory, and office, and data are properly handled, documented, and archived. Describe the various steps (e.g., personnel training, calibration of equipment, data verification and validation) that will be used to identify and eliminate errors introduced during data collection (including observer bias), handling, and computer entry. Identify the percentage of data that will be checked at each step.

### *Specimen Collections*

Clearly describe the kind (species), numbers, sizes, and locations of animals, plants, rocks, minerals, or other natural objects to be sampled, captured, or collected. Identify the reasons for collecting, the intended use of all the specimens to be collected, and the proposed disposition of collected specimens. For those specimens to be retained permanently as voucher specimens, identify the parties responsible for cataloging, preservation, and storage, as well as the proposed repository.

### *Deliverables*

The proposal must indicate the number and specific format of hard and/or electronic media copies to be submitted for each deliverable. The number and format will reflect the needs of the refuge and the refuge manager. Indicate how many months after the project is initiated (or the actual anticipated date) that each deliverable will be submitted. Deliverables are to be submitted or presented to the refuge manager.

Deliverables that are required are as follows:

### *Reports and Publications*

Describe what reports will be prepared and the timing of reports. Types of reports required in fulfillment of natural and social science study contracts or agreements include:

- (1) Progress report(s) (usually quarterly, semiannually, or annually; may be required)
- (2) Draft final and final report(s) (always required)

A final report must be submitted in addition to a thesis or dissertation (if applicable) and all other identified deliverables. Final and draft final reports should follow refuge guidelines (attachment I).

In addition, investigators are encouraged to publish the findings of their investigations in refereed professional, scientific publications and present findings at conferences and symposia. The refuge manager appreciates opportunities to review manuscripts in advance of their publication.

### *Data Files*

Provide descriptions of any spatial (Geographic Information Systems [GIS]) and non-spatial data files that will be generated and submitted as part of the research. Non-spatial data must be entered onto CD-ROMs in Microsoft Access or Microsoft Excel. Spatial data, which includes Global Positioning System (GPS)-generated files, must be in a format compatible with the refuge's GIS system (ArcGIS 8 or 9, Arcview 3.3, or e00 format). All GIS data must be in UTM 19, NAD 83. A condition of the permit will be that the Service has access to and may utilize in future mapping and management all GIS information generated.

### *Metadata*

For all non-spatial and spatial data sets or information products, documentation of information (metadata) describing the extent of data coverage and scale, the history of where, when, and why the data were collected, who collected the data, the methods used to collect, process, or modify/ transform the data, and a complete data dictionary must also be provided as final deliverables. Spatial metadata must conform to Service (FGDC) metadata standards.

### *Oral Presentations*

Three types of oral briefings should be included: pre-study, annual, and closeout. These briefings will be presented to refuge staff and other appropriate individuals and cooperators. In addition, investigators should conduct periodic informal briefings with refuge staff throughout the study whenever an opportunity arises. During each refuge visit, researchers should provide verbal updates on project progress. Frequent dialogue between researchers and refuge staff is an essential element of a successful research project.

### *Specimens and Associated Project Documentation*

A report on collection activities, specimen disposition, and the data derived from collections must be submitted to the refuge following refuge guidelines.

### *Other:*

Researchers must provide the refuge manager with all of the following:

- (1) Copies of field notes/notebooks/datasheets
- (2) Copies of raw data (in digital format), including GIS data, as well as analyzed data
- (3) Copies of all photos (digital photos preferred), slides, videos, and films
- (4) Copies of any reports, theses, dissertations, publications or other material (such as news articles) resulting from studies conducted on refuge
- (5) Detailed protocols used in study
- (6) Aerial photographs

- (7) Maps/GIS data
- (8) Interpretive brochures and exhibits
- (9) Training sessions (where appropriate)
- (10) Survey forms
- (11) Value-added software, software developed, and models

Additional deliverables may be required of specific studies.

### *Special Requirements, Permits, and Concerns*

Provide information on the following topics where applicable. Attach copies of any supporting documentation that will facilitate processing of your application.

#### *Refuge Assistance*

Describe any refuge assistance needed to complete the proposed study, such as use of equipment or facilities or assistance from refuge staff. It is important that all equipment, facilities, services, and logistical assistance expected to be provided by the Service be specifically identified in this section so all parties are in clear agreement before the study begins.

#### *Ground Disturbance*

Describe the type, location, area, depth, number, and distribution of expected ground-disturbing activities, such as soil pits, cores, or stakes. Describe plans for site restoration of significantly affected areas.

Proposals that entail ground disturbance may require an archaeological survey and special clearance prior to approval of the study. You can help reduce the extra time that may be required to process such a proposal by including identification of each ground disturbance area on a U.S. Geological Survey 7.5-minute topographic map.

#### *Site Marking and/or Animal Marking*

Identify the type, amount, color, size, and placement of any flagging, tags, or other markers needed for site or individual resource (e.g., trees) identification and location. Identify the length of time it is needed and who will be responsible for removing it. Identify the type, color, and placement of any tags placed on animals (see special use permit for stipulations on marking and handling of animals).

#### *Access to Study Sites*

Describe the proposed method and frequency of travel to and within the study site(s). Explain any need to enter restricted areas. Describe the duration, location, and number of participants, and approximate dates of site visits.

#### *Use of Mechanized and Other Equipment*

Describe any vehicles, boats, field equipment, markers, or supply caches by type, number, and location. You should explain the need to use these materials and how long they are to be left in the field.

#### *Safety*

Describe any known potentially hazardous activities, such as electro-fishing, scuba diving, whitewater boating, aircraft use, wilderness travel, and wildlife capture, handling, or immobilization.

#### *Chemical Use*

Identify chemicals and hazardous materials that you propose using within the refuge.

Indicate the purpose, method of application, and amount to be used. Describe plans for storage, transfer, and disposal of these materials and describe steps to remediate accidental releases into the environment. Attach copies of Material Safety Data Sheets (MSDS).

### *Animal Welfare*

If the study involves vertebrate animals, describe your protocol for any capture, holding, marking, tagging, tissue sampling, or other handling of these animals (including the training and qualifications of personnel relevant to animal handling and care). If your institutional animal welfare committee has reviewed your proposal, please include a photocopy of their recommendations. Describe alternatives considered, and outline procedures to be used to alleviate pain or distress. Include contingency plans to be implemented in the event of accidental injury to or death of the animal. Include State and Federal permits. Where appropriate, coordinate with and inform State natural resource agencies.

### *Literature Cited*

List all reports and publications cited in the proposal.

### *Peer Review*

Provide the names, titles, addresses, and telephone numbers of individuals with subject-area expertise who have reviewed the research proposal. If the reviewers are associated with the investigator's research institution or if the proposal was not reviewed, please provide the names, titles, addresses, and telephone numbers of three to five potential subject-area reviewers who are not associated with the investigator's institution. These individuals will be asked to provide reviews of the proposal, progress reports, and the draft final report.

### *Budget*

The budget must reflect both funding and assistance that will be requested from the Service and the cooperator's contributions on an identified periodic (usually annual) basis.

### *Personnel Costs*

Identify salary charges for principal investigator(s), research assistant(s), technician(s), clerical support, and others. Indicate period of involvement (hours or months) and pay rate charged for services. Be sure to include adequate time for data analysis and report writing and editing.

### *Fringe Benefits*

Itemize fringe benefit rates and costs.

### *Travel*

Provide separate estimates for fieldwork and meetings. Indicate number of trips, destinations, estimated miles of travel, mileage rate, air fares, days on travel, and daily lodging and meals charges. Vehicle mileage rate cannot exceed standard government mileage rates if Federal funds are to be used. Charges for lodging and meals are not to exceed the maximum daily rates set for the locality by the Federal Government (contact Presquile NWR for appropriate rates).

### *Equipment*

Itemize all equipment to be purchased or rented and provide a brief justification for each item costing more than \$1,000. Be sure to include any computer-related costs. For proposals funded under a Service agreement or contract, the refuge reserves the right to transfer the title of purchased equipment with unit cost of \$1,000 or more to the Federal Government following completion of the study. These items should be included as deliverables.

### *Supplies and Materials*

Purchases and rentals under \$1,000 should be itemized as much as is reasonable.

### *Subcontract or Consultant Charges*

All such work must be supported by a subcontractor's proposal also in accordance with these guidelines.

### *Specimen Collections*

Identify funding requirements for the cataloging, preservation, storage, and analyses of any collected specimens that will be permanently retained.



### *Printing and Copying*

Include costs for preparing and printing the required number of copies of progress reports, the draft final report, and the final report. In general, a minimum of two copies of progress reports (usually due quarterly, semiannually, or as specified in agreement), the draft final report, and the final report are required.

### *Indirect Charges*

Identify the indirect cost (overhead) rate and charges and the budget items to which the rate is applicable.

### *Cooperator's Contributions*

Show any contributing share of direct or indirect costs, facilities, and equipment by the cooperating research institution.

### *Outside Funding*

List any outside funding sources and amounts.

### *Personnel and Qualifications*

List the personnel who will work on the project and indicate their qualifications, experience, and pertinent publications. Identify the responsibilities of each individual and the amount of time each will devote. A full vita or resume for each principal investigator and any consultants should be included here.

## **Interim Final Report Guidelines**

Draft final and final reports should follow Journal of Wildlife Management format, and should include the following sections.

- Title Page
- Abstract
- Introduction/Problem Statement
- Study Area
- Methods (including statistical analyses)
- Results
- Discussion
- Management Implications
- Management Recommendations
- Literature Cited

## **COMPATIBILITY DETERMINATION**

### **USE:**

Public Deer Hunting

### **REFUGE NAME:**

Presquile National Wildlife Refuge

### **ESTABLISHING AND ACQUISITION AUTHORITY(IES):**

Presquile National Wildlife Refuge (Presquile NWR, refuge) was established on March 7, 1953, under the Migratory Bird Conservation Act (16 U.S.C. 715d) of February 18, 1929 (45 Stat. 1222) authority to “(2) acquire, by gift or devise, any area or interests therein” that the Secretary of the Interior “determines to be suitable for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.” The tract was gifted from A.D. Williams for use as a wildlife refuge in 1952.

### **REFUGE PURPOSE(S):**

In accordance with the Migratory Bird Conservation Act, the purpose of Presquile NWR is “...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.”

### **NATIONAL WILDLIFE REFUGE SYSTEM MISSION:**

The mission of the National Wildlife Refuge System (Refuge System) is “to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans” (National Wildlife Refuge System Administration Act of 1966 [16 U.S.C. 668dd-668ee], as amended by the National Wildlife Refuge System Improvement Act of 1997 [NWRSIA][Public Law 105-57]).

### **OTHER APPLICABLE LAWS, REGULATIONS, AND POLICIES:**

- The Property Clause of the U.S. Constitution Article IV 3, Clause 2
- The Commerce Clause of the U.S. Constitution Article 1, Section 8
- Executive Order 12996, Management and General Public Use of the National Wildlife Refuge System, March 25, 1996
- Antiquities Act of 1906 (34 Stat. 225)
- Migratory Bird Treaty Act of 1918 (15 U.S.C. 703-711; 40 Stat. 755)
- Migratory Bird Conservation Act of 1929 (16 U.S.C. 715r; 45 Stat. 1222)
- Criminal Code Provisions of 1940 (18 U.S.C. 41)
- Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d; 54 Stat. 250)



- Refuge Trespass Act of June 25, 1948 (18 U.S.C. 41; 62 Stat. 686)
- Fish and Wildlife Act of 1956 (16 U.S.C. 742a-742j; 70 Stat. 1119)
- Refuge Recreation Act of 1962 (16 U.S.C. 460k-460k-4; 76 Stat. 653)
- Land and Water Conservation Fund Act of 1965
- National Historic Preservation Act of 1966, as amended (16 U.S.C. 470, et seq.; 80 Stat. 915)
- National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd, 668ee; 80 Stat. 927)
- National Environmental Policy Act of 1969, NEPA (42 U.S.C. 4321, et seq.; 83 Stat. 852)
- Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.; 87 Stat. 884)
- Refuge Revenue Sharing Act of 1935, as amended in 1978 (16 U.S.C. 715s; 92 Stat. 1319)
- Archaeological Resources Protection Act of 1979
- Emergency Wetlands Resources Act of 1986 (S.B.740)
- Native American Graves Protection and Repatriation Act of 1990
- North American Wetlands Conservation Act of 1990
- Food Security Act (Farm Bill) of 1990, as amended (HR 2100)
- The National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57, U.S.C. 668dd)
- Title 50, Code of Federal Regulations, Parts 25-33 (50 CFR 25-33)
- National Wildlife Refuge Regulations for the Most Recent Fiscal Year (50 CFR Subchapter C; 43 CFR 3101.3-3)

## **DESCRIPTION OF USE:**

### **(a) What is the use? Is the use a priority public use?**

The use is the public hunting of white-tailed deer on the refuge. Hunting was identified as one of six priority public uses by Executive Order 12996 (March 25, 1996) and by the Refuge System Improvement Act.

### **(b) Where would the use be conducted?**

The use will continue to occur on approximately 1,229 acres of the 1,329-acre island refuge (figure B.1), with access provided on the 3.5-mile trail network and stationary/temporary docking locations (figure B.2). A “no hunt zone” of approximately 100 acres has been identified to protect people and property on the refuge, as well as on the waters and properties adjacent to the refuge.

Approximately 500 acres of mesic forest, swamp, and grassland habitat is open to deer hunting and is easily accessible. The remaining areas open to hunting (729 acres) include backwaters, marsh, and swamp habitat. These areas offer the type of quality hunt desired by some deer hunters, including reasonable harvest opportunities, un-crowded conditions, fewer conflicts among hunters, relatively undisturbed wildlife, and limited interference from, or dependence on, mechanized aspects of the sport.

**(c) When would the use be conducted?**

The use would be conducted in designated areas of the refuge in accordance with Federal and State regulations. Hunting would take place on three to five days of the Commonwealth of Virginia's shotgun season for white-tailed deer hunting (<http://www.dgif.virginia.gov/hunting>; accessed June 2012). Dates for hunting on Presquile NWR are chosen by refuge staff on an annual basis. Public deer hunting on the refuge occurs between the opening day of shotgun season through to the beginning of eagle nest building season (typically mid-November through mid-December). Tides and staff availability are factors considered when determining annual hunting dates.

Permitted hunters may access the refuge during legal hunting hours of one half-hour before sunrise to one-half after sunset (usually 4:00 a.m. to 7:00 p.m.), in accordance with the Commonwealth's hunting regulations. Hunters must exit the refuge by 7:00 p.m. on their hunt day.

**(d) How would the use be conducted?**

Hunting will occur according to Commonwealth of Virginia's regulations and will be subject to refuge-specific regulations, according to the Federal regulations published in Title 50 of the Code of Federal Regulations (50 CFR 32.66). However, the refuge manager may, upon annual review of the hunting program and in coordination with the Virginia Department of Game and Inland Fisheries (VDGIF), impose further restrictions on hunting, recommend that the refuge be closed to hunting, or further liberalize hunting regulations within the limits of state seasons and regulations. We may restrict hunting if it conflicts with other, higher priority refuge programs or endangers refuge resources or public safety.

In 2011, the U.S. Fish and Wildlife Service (Service) established a Memorandum of Agreement (MOA #503130-11K006) with VDGIF to administer a quota hunt at the refuge. This agreement will be effective for five years and renewed as appropriate. VDGIF works through a contractor (currently CyberData Technologies, Inc., NY) to process hunter applications, make equitable and random selections of hunters to participate in the hunt, notify all applicants about the selection outcome, and provide applicant contact information to the Service. A processing fee of \$7.50 is charged to each applicant by the VDGIF contractor as reimbursement for services provided.

Refuge quota hunts are advertised on the refuge and VDGIF Web sites (currently found at <http://www.fws.gov/northeast/presquile> and <http://www.dgif.virginia.gov/hunting/quotahunts>, respectively; accessed June 2012); in the annual "Hunting & Trapping in Virginia" regulations digest, published by VDGIF; and in local publications (e.g., Chesterfield Observer and Richmond Times-Dispatch newspapers). Participation instructions are included in these announcements. A limited number of scouting days prior to the application deadline are offered to help interested parties determine if they want to submit an application to hunt on the refuge.

Individuals selected to participate in the annual hunt may bring a guest, if previously identified on the hunt application. Up to 120 hunters participate in the refuge hunt annually. The individual and guest (if applicable) selected to participate in the annual hunt must each complete a "White-tailed Deer Refuge-specific Hunting Permit Conditions" form, which details requirements of the hunt as identified in 50 CFR 32.66; the 2010 version of this form is included in this compatibility determination (attachment 1). A refuge hunt permit fee of \$10.00 is charged to each hunter.

Once refuge staff receive the signed permit conditions form and associated fee payment, refuge staff issue a permit and provide additional information about the hunt (e.g., refuge hunt map [see figure B.2], details about additional scouting dates). The deer hunting permit is issued by the refuge to the selectee for one designated hunt day; their designated hunt date is specified on the non-transferrable permit. The permit allows for harvest of white-tailed deer by shotgun only. A limit of two deer per day (either sex) is allowed, provided the hunter's license has harvest tags available.

Hunters must access refuge lands from designated access points, and hunting is prohibited in "no hunt zones" (figure B.2). Site selection and spacing is determined by the individual hunter. Portable tree stands are the only type of tree stand permitted for use during the hunt day and must be removed at the end of each hunt day. Hunters are solely responsible for the retrieval and transport of harvested deer back to their boat. No motorized or mechanized vehicles, such as off-road vehicles, are allowed on refuge property.

All persons participating in the refuge hunt must have a valid State hunting license and refuge permit in their possession while on the refuge. Hunters are required to wear 400 square inches of blaze orange, visible from 360 degrees.

Prohibited activities include:

- The use of “man drives,” defined as individual or group efforts intended to “push” or “jump” deer for the purposes of hunting
- Discharging a weapon within 300 feet of any building
- Possessing a loaded weapon on road, in watercraft, or in “no hunt zones”
- Docking watercraft outside of designated areas
- Hunting with dogs
- Smoking
- Use or possession of alcohol
- Creating fires

All hunters that successfully harvest deer are to check their game through a State game checking system. Hunters receive a confirmation number for verification of the check-in.

The current means of processing this information is by calling 1-866-GOT-GAME (468-4263) or online at: <http://www3.dgif.virginia.gov/gamecheck> (accessed June 2012). Contact VDGIF as this information may change within the life of this document.

**(e) Why is the use being proposed?**

Hunting is one of the six priority public uses as defined by the National Wildlife Administration Act of 1966, as amended by the Refuge System Improvement Act of 1997. If compatible, hunting is to receive enhanced consideration over other general public uses in refuge planning and management.

Sport hunting is a tool managers use to maintain wildlife populations at an acceptable level. The VDGIF establishes hunting seasons and bag limits to meet population objectives and to offer people the opportunity to experience a traditional outdoor recreational activity. Game species population objectives are determined by a number of factors such as habitat limitations and landowner tolerances, and each year the seasons and bag limits are designed to remove the harvestable surplus without long-term negative impacts to the population. The ability to effectively manage game species populations depends in large part on the availability of land with quality habitat. Providing hunting opportunities on the refuge will aid the Commonwealth in meeting its management objectives and preserve a wildlife-dependent priority public use long associated with this land.

The Service intends to continue the tradition of wildlife-related recreation on the refuge by allowing hunting in compliance with State regulations. By allowing this use to continue, hunters can experience this traditional recreational activity, aid the refuge and State in maintaining acceptable game species population levels, gain a better appreciation of the refuge’s high quality wildlife habitats, and become better informed about the refuge and the Refuge System.

The Service encourages the development of hunting programs on national wildlife refuges when they are compatible with the refuge’s legal purposes, biologically sound, affordable, properly coordinated with other refuge programs, and meet the Service description of a quality hunt. “Quality hunts” are defined as those which are planned, supervised, conducted, and evaluated to promote positive hunting values and ethics such as fair chase and sportsmanship. The Service strives to provide hunting opportunities on refuges which are superior to those available on other public or private lands, and to provide participants with reasonable harvest opportunities, un-crowded conditions, fewer conflicts among hunters, relatively undisturbed wildlife, and limited interference from, or dependence on, mechanized aspects of the sport (605 FW 2).

The refuge was opened to public deer hunting in 1967 (32 FR 12444; codified at 50 CFR 32.31). A compatibility determination (1994) emphasizes that the objectives of the public deer hunting were to maintain the deer population at a level commensurate with the biological carrying capacity (as defined in Smith 1980) of the available refuge habitat and to provide high quality wildlife-oriented recreation. Continuing to allowing this public use will also support visitor services goals developed for Presquile NWR’s Comprehensive Conservation Plan (CCP):

Wildlife-Dependent Recreation Goal: Provide wildlife-dependent recreational opportunities (interpretation, wildlife observation, nature photography, and hunting) for visitors to enjoy and connect with nature and develop an enhanced appreciation for and understanding of the refuge’s natural and cultural resources.

**AVAILABILITY OF RESOURCES:**

The financial and staff resources necessary to provide and administer these uses at their current levels are now available. We expect the existing financial resources to continue in the future, subject to availability of appropriated funds.

The Refuge Recreation Act requires that funds are available for the development, operation, and maintenance of the permitted forms of recreation. The preseason application fee and refuge hunting permit fee are the minimal amounts needed to offset the cost of facilitating the preseason drawings and manage the hunts. Due to the uncertainty in the level of hunter participation with these new program changes, permit fees may need to be adjusted (increased or decreased) and will be evaluated annually.

Current annual administrative costs associated with the existing refuge-supported operations for the deer hunt program are detailed in table B.2. Permit fees serve as cost recovery for administration of the public deer hunting program (table B.3).

**Table B.2. Current Annual Administrative Costs Associated with Public Deer Hunting.**

Activities	Resource	Annual Duration	Rate <sup>1</sup>	Cost
Program review, approves hunt conditions, submits updated CFR regulations	Deputy Refuge Manager (GS-12)	8 hours	\$42 / hour	\$336
Site preparation, scheduling, collaborates with VDGIF and contractor, responds to public inquiries, promotes use, administers and defines hunt conditions	Wildlife Refuge Specialist (GS-11)	40 hours	\$35 / hour	\$1400
Monitors harvest data, authors annual hunt plan, collaborates with VDGIF and contractor, defines hunt conditions, participates in deer health assessments	Wildlife Biologist (GS-11)	16 hours	\$35 / hour	\$560
Conducts patrols, coordinates with Federal and State conservation officers, defines hunt conditions	Federal Wildlife Officer (GL-09)	40 hours	\$39 / hour	\$1560
Support materials, mailings, and fuel				\$400
<b>TOTAL</b>				<b>\$4,256</b>

*Note: Some actions and resulting costs also support other approved public uses (i.e., wildlife observation, photography, environmental education, and interpretation).*

<sup>1</sup> In 2012 dollars, full performance salary at GS-Step 6 or GL-Step 6.

**Table B.3. Annual Costs Recovered from Allowing Public Deer Hunting.**

Service Provided	Provider	Cost per Unit	Units	Annual Costs Recovered
Application Fee	DGIF contractor	\$7.50 / application	85 / year (on average)	\$637.50
Refuge Hunt Permit Fee	Refuge (80%)	\$10.00 / permit issued	<120 / year	<\$1200
	Region (20%)			
TOTAL				\$5,456

## **ANTICIPATED IMPACTS OF THE USE:**

Hunting can result in positive or negative impacts to the wildlife resource. A positive effect of allowing visitors' access to the refuge will be the provision of additional wildlife-dependent recreational opportunities and a better appreciation and more complete understanding of the wildlife and habitats associated with Delmarva ecosystems. This can translate into more widespread and stronger support for the refuge, the Refuge System, and the Service. The following is a discussion of refuge-specific impacts, which are supported by a compilation of baseline information relative to the featured topic.

### **General Impacts of Public Use**

Direct impacts are those impacts immediately attributable to an action. Indirect impacts are those impacts that are farther in time and in space. Effects that are minor when considered alone, but collectively may be important are known as cumulative effects. Incremental increases in activities by people engaged in the variety of allowed uses on the refuge could cause cumulative impacts. It will be important for refuge staff to monitor these activities to ensure wildlife resources are not impacted in a detrimental manner.

### **Soils and Vegetation Impacts**

Repeated visitation to any particular locale at the refuge would continue to cause minor site-specific damage to vegetation. Repeated use of an aquatic area by boats equipped with go-devils can damage to emergent and submergent vegetation beds. Portions of or whole plants can be torn, sometimes by roots, and boat wakes contribute to erosion. Accidental introduction of invasive plants, pathogens, or exotic invertebrates attached to boats or trailers, or on shoes or clothing, is another source of direct minor impacts on vegetation. In places where unmarked paths are created by hunters and anglers, little used pathways will retain their dominant vegetation species, but on medium-use pathways some plant species will be replaced and heavily-used paths will often contain invasive species (Liddle and Scorgie 1980).

Using staff observations of past impacts, hunting is expected to have negligible adverse impacts on soils and vegetation in the short and long-term. Disturbance to soils and vegetation may occur when hunters travel off-trail through upland and wetland habitats. Since all soils at Presquile NWR have a severe rating for rutting hazard (USDA 2010), possibility for new trails to be developed from repeated hunter entry may occur in the long term. However, given the large expanse of both upland and wetland acreage open to hunting and the limited number of hunt days offered on the refuge, we expect negligible impacts to soils and vegetation would result because the hunters disperse themselves across hunting areas, hunters typically only travel as far as needed to find a desirable hunting location, and most vegetative species will have already undergone senescence or become dormant.

The physical effects on vegetation from hunting various refuge deer in the fall are expected to be minimal. Positive, indirect effects on the vegetation would result from a reduction in the white-tailed deer population. The impacts of dense deer populations on forest regeneration and the composition and diversity of the herbaceous understory have been well documented (Tierson et al. 1966, Behrend et al. 1970, Tilghman 1989). Allowing public deer hunting on the refuge would maintain the habitat as it is now and prevent degradation due to overbrowsing. Well-managed hunting can effectively control deer and produce dramatic changes in the forest vegetation (Behrend et al. 1970). The impact of deer hunting on the vegetation would be positive and result in better regeneration of forest canopy species and an increase in the diversity of the herbaceous understory. In summary, there would be few if any negative impacts from this use on the refuge's vegetation, but there would be beneficial impacts from the decrease of deer browse on the refuge's vegetation due to the decrease in the number of deer on refuge lands.

Possible negative cumulative impacts of the proposed activity include temporary trampling of vegetation and soil rutting. Since hunters are not restricted to utilizing only trails designed for other public use activities, they may impact vegetation and soils off-trails. However, these effects are expected to be minimal because hunters are generally dispersed on each of the hunt days. Few scouting and hunting days are offered each year. Also, hunters are required to travel on-foot. Areas open to public deer hunting would be monitored for impacts to vegetation and soils and, if impacts are noticed, designated areas would be temporarily closed for restoration.



The short-term impacts of trampling vegetation include damage and killing of individual plants, whereas long-term impacts include soil compaction (Kuss 1986). However, due to the limited number of hunters and hunt dates, minimized off-trail travel, and the dispersed nature of the hunt, we predict that these impacts will be minor. White-tailed deer foraging can also have negative impacts on native vegetation, including reduced forest regeneration and changes in plant composition and structure (Augustine and Jordon 1998).

## **Wildlife Impacts**

### *White-tailed Deer*

Virginia's prehunt deer population is estimated to be between 850,000 and 1,000,000 deer, and is not at risk (VDGIF 2012). The State determines seasons, bag limits, and number of permits based on regional deer harvest data. Annually since 2001, deer harvests have increased from Chesterfield County, Charles City County, and Henrico Counties (41 percent, 26 percent, and 34 percent, respectively), indicating growing deer populations in the refuge vicinity.

By law, each successful deer hunter is required to check every deer killed. Information regarding the animal's sex, date of kill, weapon, and county of kill is recorded at check stations or contacting the VDGIF office. Results of the annual deer kill represent an actual known minimum count. However, since the refuge does not operate a check station and hunters only report the county in which a deer was harvested, the actual number of deer harvested by hunters on the refuge is not known. The best available information about hunter participation and deer harvest success rates is from refuge staff (Cyrus Brame, personal communication). Between 2007 and 2011, an average of only 92 visitors participated in the annual public deer hunt. Refuge staff approximate that only 10 percent of hunters on the refuge successfully harvest a deer. These data suggest that likely no more than 20 deer have been harvested annually between 2007 and 2011. Even if every potential hunting permit was issued, each permitted hunter showed up on the refuge to hunt, and each hunter was successful in harvesting two deer per day, this would mean that a maximum deer harvest would be 240 deer. A harvest of 240 deer would have accounted for only 12 percent of the deer reported harvested from Chesterfield County in 2011 (<http://www.dgif.virginia.gov/wildlife/deer/harvest/index.asp>; accessed June 2012).

The Commonwealth's deer management program regulates deer hunting toward maintaining at moderate to low population densities, in fair to good physical condition, and below the biological carrying capacity of the habitat (VDGIF 2012). Through partnership with the VDGIF, a health assessment of deer collected on the refuge was conducted in September 2004. This assessment occurred prior to the deer hunt season on the refuge. Results from the most recent health assessment of the local deer population indicate that deer on the refuge are in poor physical condition, have a high parasite burden, and that the population in the refuge vicinity is higher than optimal for Presquile NWR (Moyer 2004).

Therefore, the deer hunt program at Presquile NWR has a minor, beneficial impact of deer hunting on the white-tailed deer populations in Chesterfield County.

### *Other Resident Wildlife*

The use does have some disturbance to other native wildlife present on the refuge. However, the timing of the hunt is such that many native wildlife species are either away or dormant at the time of the hunt and, therefore, unlikely to be affected. White-tailed deer hunting is the single most important public use on the refuge that would impact mammals, including deer and other forest-dependent wildlife. Impacts on amphibians and reptiles are expected to be negligible because these species are preparing or already hibernating or in torpor during the hunt days on the refuge (typically occurring mid-November through mid-December). Impacts to invertebrates such as butterflies, moths, other insects, and spiders are expected to be negligible. Invertebrates are not active during the majority of the hunting seasons and would have few interactions with hunters during the hunting season.

Managing the deer population at a level that refuge habitat can support prevents direct negative impacts to other wildlife and habitat present. For example, heavily browsed habitats (a result of insufficient food for the herd size) have shown to decrease migratory song bird foraging opportunity (deCalesta 1994).

### *Migratory Birds*

Fall is the season for bird migration, and hunting may disturb their resting and foraging during this critical time. The impacts from hunting are not known, but related to the frequency, type, and duration of the disturbance. Migrating and wintering birds may be foraging and roosting in upland and wetland habitats. Hunting activity may cause these birds to unnecessarily take flight, expending energy resources when food resources are limited. Since this use is not concentrated in space or time (it occurs on select days throughout the refuge during designated times within the hunting season), the disturbance effects on wildlife that are using the refuge during fall and winter are not expected to be significant.

Access to interior creeks may result in flushing of waterfowl and waterbirds. However, limited boat accessibility due to the tidal fluctuations of the creeks and wide distribution of a relatively small amount of hunters, many of the tributaries and western-most locations within the creeks will be undisturbed. Additionally, waterfowl and waterbirds often move out of the creeks during daylight hours to forage and loaf in and along the main stem of the James River. Other types of migratory birds, namely neotropical migrant species, have already departed the refuge for wintering grounds further south.

The ingestion of lead shot by birds, especially waterfowl, is a concern. However, the impacts are lessened on refuge lands due to regulations encouraging the use of lead-free shot for deer hunting on the refuge.

### *Species of Special Status*

Anticipated direct, indirect, and cumulative impacts to endangered species, threatened species, and other special status species of the refuge are described below. The refuge requested Section 7 informal consultation with the Service's Virginia Field Office under the Endangered Species Act (16 U.S.C. 1536) on all the actions in alternative B of the draft CCP/environmental assessment (EA) for Presquile NWR, including hunting, that could potentially impact listed species. This process resulted in a finding that our proposed actions are not likely to adversely affect the listed species or their associated habitats on the refuge. The full Intra-Service Section 7 Biological Evaluation form can be found in appendix E of the draft CCP/EA. Other, non-game special status species are not expected to be impacted by public deer hunting at Presquile NWR.

Bald eagles (*Haliaeetus leucocephalus*) are known to nest, roost, and winter at Presquile NWR. We abide by the Joint Service-State Bald Eagle Protection Guidelines for Virginia (VDGIF 2008), observing the time of year restrictions when determining appropriate hunt dates. Therefore, deer hunting is not permitted in the vicinity of eagle nests after December 15.

Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) are known to occur in the James River, near Presquile NWR. The Chesapeake Bay population of this species was recently listed as federally endangered. Sturgeon migrate to the Atlantic Ocean in late summer, so they would not be present in the waters around Presquile NWR when deer hunters access the refuge by boat.

Sensitive joint-vetch (*Aeschynomene virginica*) plants are known to occur in tidal freshwater marshes at Presquile NWR. Since this habitat is unsuitable for deer and inaccessible by hunters, no impacts to sensitive joint-vetch would result from public deer hunting at the refuge.

### **Impacts on Public Use and Access**

Refuge lands have become increasingly important in the region as a place to engage in this activity. Hunters have the opportunity to harvest a renewable resource in a traditional manner, which is culturally important to the local community. Refuge lands allow the public to enjoy hunting at no or little cost in a region where private land is leased for hunting, often costing a person several hundred to several thousand dollars per year for membership. Refuge hunting programs provide opportunities to experience a wildlife-dependent recreational activity, instill an appreciation for and understanding of wildlife, the natural world and the environment, and promote a land ethic and environmental awareness. The minor beneficial impacts of providing the existing level of wildlife-dependent activities include helping meet existing and future demands for outdoor recreation and education.

The refuge would also be promoting a wildlife-oriented recreational opportunity that is compatible with the purpose for which the refuge was established. The public would have an increased awareness of the refuge and the Refuge System and public demand for more areas to hunt and learn about wildlife would be met. Over time, it is reasonable to believe that public awareness of the refuge would increase, and, in turn, visitation would increase on the areas open to hunting. We anticipate that the refuge would continue to meeting the demand as it increases in the long term.

On hunt days, the refuge will be closed to other public uses (i.e., wildlife observation, nature photography, environmental education, interpretation, and research by non-Service personnel). The limited number of public deer hunting days allows us to avoid potential for conflicts among appropriate and compatible public uses of the refuge. We anticipate a negligible impact on other public uses of the refuge.

### **PUBLIC REVIEW AND COMMENT:**

As part of the comprehensive conservation planning process for Presquile NWR, this compatibility determination will undergo extensive public review, including a comment period of at least 30 days following the release of the draft comprehensive conservation plan and environmental assessment.

### **DETERMINATION (CHECK ONE BELOW):**

- ☐ Use is not compatible
- ☒ Use is compatible, with the following stipulations

### **STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:**

- The following stipulations will help ensure the refuge white-tailed deer hunting program is compatible with refuge purposes.
- Hunters must abide by all applicable Federal, State, and refuge-specific regulations. Refuge-specific regulations are published annually in the Federal Register, Title 50 of the Code of Federal Regulations, and on a form that hunters must sign to be issued a hunt permit (see attachment 1).
- Hunters meet all State hunting license and refuge hunt permitting requirements to participate in the refuge's deer hunt.
- Each hunter shall comply with the terms and conditions under which hunting permits are issued. This includes, but is not limited to, big game harvest reporting.
- Hunters must access the refuge only via designated docking location.
- Hunters are encouraged to use lead-free shot.
- Refuge staff will help ensure compliance of hunt regulations and protect refuge resources.
- Refuge staff shall adhere to the Joint Service-State Bald Eagle Protection Guidelines of Virginia when planning upcoming public deer hunts and administering the hunt.



**JUSTIFICATION:**

Hunting is a priority public use and is to receive enhanced consideration on refuges, according to the Refuge System Improvement Act. Providing increased wildlife-dependent recreational opportunities at Presquile NWR promotes visitor appreciation and support for the refuge, Refuge System, and Service; engages communities in local habitat conservation efforts in the lower James River and the Chesapeake Bay; and instills a sense of ownership and stewardship ethic in refuge visitors.

Hunting, as described above, will not detract from the purpose and intent of the refuge. Stipulations described will ensure proper control over the use and provide management flexibility should detrimental impact develop. Allowing this use furthers the mission of the Refuge System and Service by expanding opportunities for wildlife dependent uses when compatible and consistent with sound fish and wildlife management. We have determined that hunting will not materially interfere with, or detract from, the fulfillment of the Refuge System mission or the purposes for which the refuge was established.

**SIGNATURE:**      Refuge Manager: \_\_\_\_\_  
(Signature and Date)

**CONCURRENCE:**      Regional Chief: \_\_\_\_\_  
(Signature and Date)

**MANDATORY 15 YEAR RE-EVALUATION DATE:** \_\_\_\_\_

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Figure B.1. Location and relation of Presquile National Wildlife Refuge to conservation lands in the vicinity

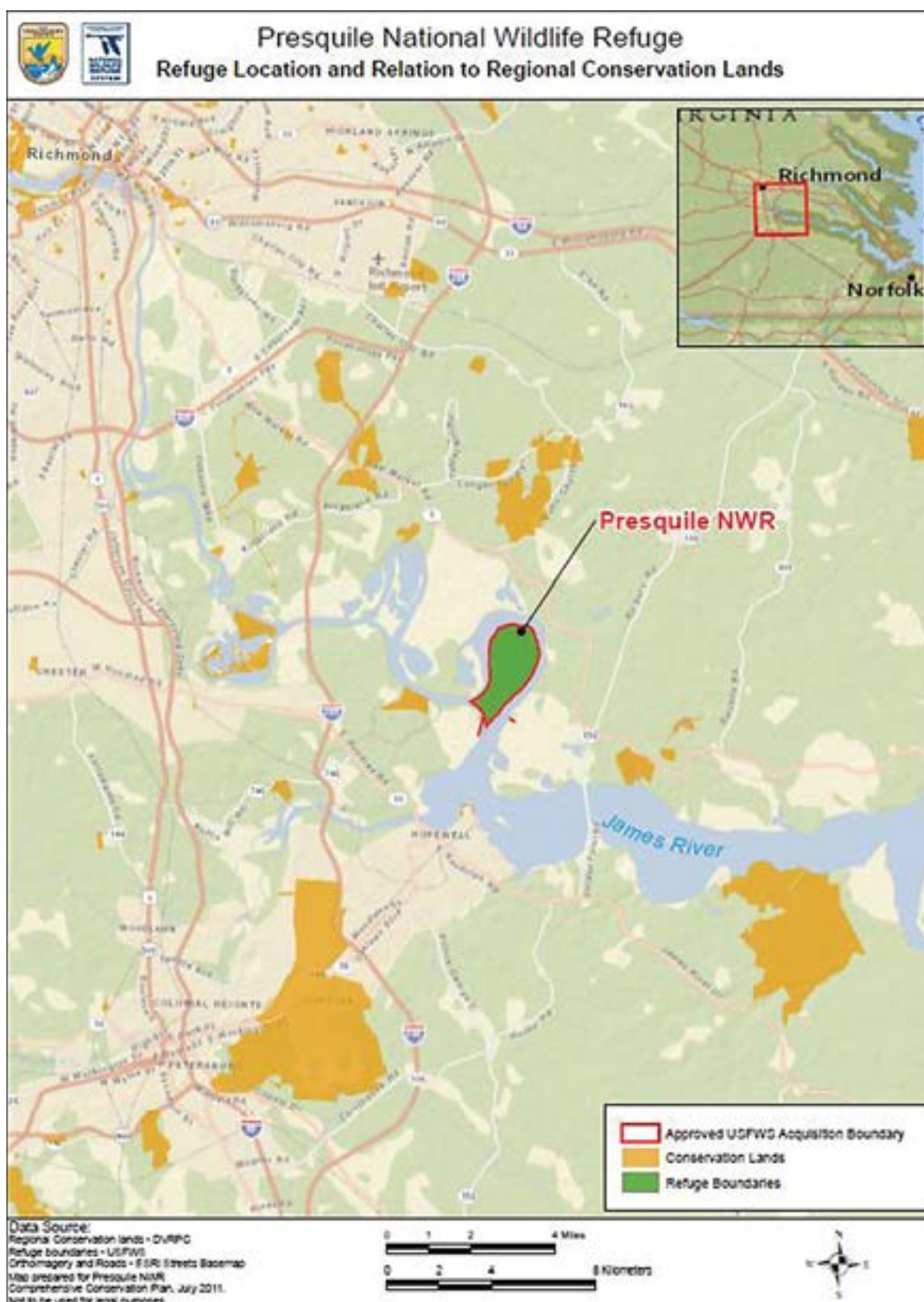
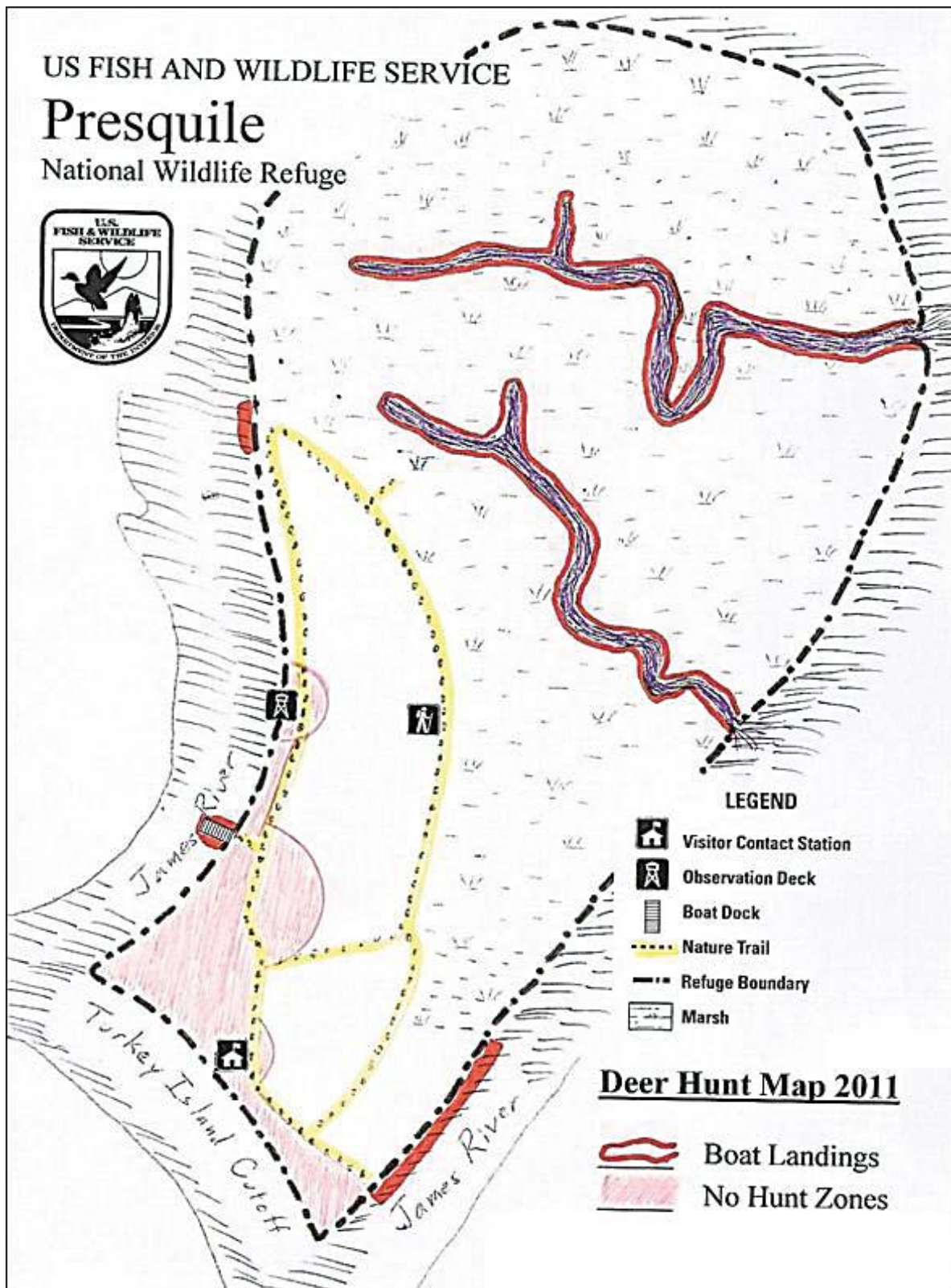




Figure B.2. Deer hunt map (2011) for Presquile National Wildlife Refuge, showing designated boat landing areas and “no hunt zones”



## Attachment 1. 2010 Refuge-specific Deer Hunting Permit Conditions for Presquile NWR

**Presquile National Wildlife Refuge  
2010 Refuge-Specific Hunting Permit Conditions**

In addition to current Code of Virginia Big Game Hunting Regulations and Title 50 Code of Federal Regulations, hunting of white-tailed deer in designated areas of the Refuge is subject to the following permit conditions. **APPLICANTS MUST SIGN BELOW AND RETURN WITH PERMIT FEE. NO PERMIT WILL BE ISSUED UNLESS A SIGNED COPY IS RECEIVED BY THE REFUGE OFFICE.** Any violation of the permit conditions may result in loss of hunting privileges. No refunds will be given.

1. We require big game hunters to obtain a permit by way of quota hunt application and subsequent lottery. We require a fee to obtain a refuge hunting permit. We notify successful applicants by mail or e-mail, and if we receive the hunting fee by the date identified in the mailing, we mail refuge hunting permits to successful applicants.
2. We require hunters to possess a refuge hunting permit, along with their State hunting license and stamps, while on refuge property.
3. We require still hunting only. We prohibit the use of "man drives", defined as individual or group efforts intended to "push" or "jump" deer for the purposes of hunting.
4. We allow the use of shotguns (20 gauge or larger, loaded with buckshot and or rifled slugs). We require hunters using slugs to be in a stand elevated 10 feet or more above the ground.
5. We permit the take of two deer of either sex per day.
6. We prohibit dogs.
7. We prohibit the discharge of a weapon within 300 feet of any building.
8. We allow only portable tree stands that hunters must remove at the end of each hunt day. We prohibit damage to trees.
9. We require hunters to wear in a conspicuous manner on head, chest, and back a minimum of 400 square inches of solid-colored, hunter-orange clothing or material.
10. We prohibit the use of flagging to mark trails or for any other purpose.
11. Persons possessing, transporting, or carrying firearms on National Wildlife Refuges must comply with all provisions of state and local law. Persons may only use (discharge) firearms in accordance with refuge regulation (see 27.42 of this chapter).
12. We require youth hunters aged 12 to 17 to be accompanied by and under the direct control of an adult, aged 21 or older, who must also possess and carry a valid hunting license and Refuge Hunting Permit. We do not permit persons under the age of 12 to hunt on the refuge.
13. We prohibit the use or possession of alcohol while hunting on the refuge.
14. We require hunters to dock their boats at designated locations on the refuge.
15. We require hunters to report accidents or injuries to the refuge office or sheriff's office no more than 24 hours after the incident. Hunting accidents resulting in serious injury must be reported to the sheriff's office immediately.

**I confirm that I understand and will comply with the conditions stated above.**

\_\_\_\_\_  
Name (Please Print)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
\* Parent/Legal Guardian Name (Print)

\_\_\_\_\_  
Parent/Legal Guardian Signature

\_\_\_\_\_  
Date

\* NOTE: Both hunter and Parent/Legal Guardian must sign if hunter is a youth under the age of 18.

## COMPATIBILITY DETERMINATION

### **USE:**

Wildlife Observation, Photography, Environmental Education, and Interpretation

### **REFUGE NAME:**

Presquile National Wildlife Refuge

### **ESTABLISHING AND ACQUISITION AUTHORITY(IES):**

Presquile National Wildlife Refuge (NWR) was established on March 7, 1953, under the Migratory Bird Conservation Act (MBCA)(16 U.S.C. 715d) of February 18, 1929 (45 Stat. 1222) authority to “(2) acquire, by gift or devise, any area or interests therein” that the Secretary of the Interior “determines to be suitable for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.” The tract was gifted from A.D. Williams for use as a wildlife refuge in 1952.

### **REFUGE PURPOSE(S):**

In accordance with the MBCA, the purpose of Presquile NWR is “...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.”

### **NATIONAL WILDLIFE REFUGE SYSTEM MISSION:**

The mission of the National Wildlife Refuge System (NWRS) is “to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans” (National Wildlife Refuge System Administration Act of 1966 [16 U.S.C. 668dd-668ee], as amended by the National Wildlife Refuge System Improvement Act of 1997 [NWRSIA][Public Law 105-57]).

### **DESCRIPTION OF USE:**

#### **(a) What is the use? Is the use a priority public use?**

The uses are wildlife observation, photography, environmental education, and interpretation. The NWRSIA identified these uses as four of the six, priority, wildlife-dependent recreational uses to be facilitated in the NWRS.

#### **(b) Where would the use be conducted?**

These four public uses will be concentrated on approximately 17 acres (hereafter referred to as the “public use area”) of the 1,329-acre island refuge (Figure B.3). A 3-mile trail network (mowed path, gravel corridor, and boardwalk) occupies 7 acres, and high foot traffic areas adjacent to structures occupy 10 acres of upland lawn (Figure B.4). Overnight accommodations are located within the public use area and, more specifically, within a 200-yard radius of the existing environmental education center (Figure B.4).

#### **(c) When would the use be conducted?**

These four public uses may occur when there are no time-of-year restrictions. Time-of-year restrictions ensure compliance with purposes for which the refuge was established; and specifically, to protect threatened or endangered species and species of concern, and to prevent conflicts with other refuge public uses (i.e., public deer hunt) or management activities (e.g., prescribed burn). Partner-sponsored environmental education will occur as outlined in an annual environmental education plan, which is approved by the Refuge Manager.



Environmental education programming includes single-day and multi-day/overnight visits. Other events will be scheduled on a case-by-case basis.

**(d) How would the use be conducted?**

These four public uses will be conducted by individuals or groups, participating in self-guided or group activities. Visitation to Presquile NWR is authorized either through participation in a refuge-sponsored program or by obtaining an approved General Special Use Permit (General SUP).

Refuge-sponsored programs are advertised in local publications and on the refuge website (<http://www.fws.gov/northeast/presquile>). Participation instructions are included in these announcements. Individuals do not need to acquire a General SUP to participate in refuge-sponsored programs.

A General SUP may be issued to an individual; a group (e.g., birding club, Virginia Master Naturalists); or formally-recognized U.S. Fish and Wildlife Service (FWS) partner organization or agency (e.g., Richmond Audubon Society, James River Association [JRA], National Park Service [NPS]) sponsoring a wildlife-dependent recreational use program. Program sponsors request a General SUP on behalf of program participants; individuals participating in partner-sponsored programs do not need to acquire their own General SUPs. For example, the JRA is a formally-recognized FWS partner organization that has been granted a General SUP to conduct an environmental education program for student groups at Presquile NWR on a recurring basis. The General SUP application will be mailed, emailed, or faxed to the applicant upon request. The Refuge Manager, or his designee, will evaluate the General SUP application and determine if a permit will be issued. The applicant will be sent an approved General SUP and informed that the applicant must have a copy of the permit in his/her possession while visiting the refuge. If a permit application is denied, the applicant will be informed of the basis for permit denial.

The refuge is accessible by watercraft (e.g., kayak, canoe, boat, jet boats). Permit applicants are informed that a limited number of watercraft can be accommodated by the refuge's small dock (30-ft long by 10-ft wide; Figure B.4) and that the quality of the outdoor experience is improved when groups are kept to fewer than 35 individuals. Refuge use and trail information is provided to visitors in advance of their visit. Refuge staff and partners communicate directly with visitors, referring them to the trail flyer on the refuge website and to the terms and conditions detailed in their General SUP.

### **Access to the Refuge**

Refuge or partner-sponsored programs access the refuge in accordance with terms and conditions of access easements on adjacent private property.

When not participating in refuge- or partner-sponsored events, permitted refuge visitors access the island by launching from a public launch site in the vicinity or from an area of their choosing for which they have approval, using privately-owned watercraft. Watercraft tie up at the refuge's existing floating dock, which is located on the southwestern side of the island (Figure B.4). A limited number of visitors may be authorized to access the refuge via the small kayak launch on an unnamed tidal creek and associated boardwalk (Figure B.4). These are the only two locations where unchaperoned (unaccompanied by a FWS employee or representative) refuge access is authorized for wildlife observation, photography, environmental education, and interpretation.

### **Access on the Refuge**

Once ashore, visitors walk on the dock, boardwalk, or maintained lawn and proceed to hike along trails, staying within the 17-acre public use area. Off-trail use is acceptable only when participating in specific, refuge-authorized activities (e.g., tree planting, invasive species control).

### **Future Infrastructure and Programming Enhancements**

Future infrastructure and programming enhancements may be implemented in accordance with an approved Comprehensive Conservation Plan (CCP; currently in development) and Visitor Services step-down plan (to be completed within 3 years of an approved CCP) for Presquile NWR, as funding and staff become available. In the interim, a FWS Visitor Services Review (USFWS 2010) recommended that the refuge proceed with its environmental education partnership with the JRA and expand opportunities for wildlife observation, photography, environmental education, and interpretation. Potential enhancements may include: installation of a permanent viewing scope at the observation platform; development and installation of interpretive

panels regarding cultural and natural history of the site; and development of goals and objectives for the environmental education program in partnership with appropriate partners (e.g., JRA) which incorporate FWS messages, such as the mission of the FWS and Leave No Trace.

### **The James River Ecology School**

The bulk of visitors, students, and youth groups using Presquile NWR for environmental education will be participants of the James River Ecology School (the Ecology School). In December 2007 FWS signed a 20-year Memorandum of Understanding (MOU) with the JRA to develop the Ecology School. The Ecology School programming is designed to provide meaningful outdoor experiences that connect people with nature, is focused on the Chesapeake Bay and James River watershed, and is consistent with Virginia Standards of Learning requirements.

In accordance with the MOU, JRA will recruit participants and coordinate the administration of the Ecology School with general oversight by the FWS. The FWS and JRA will cooperatively develop an annual environmental education plan that lists the dates and outlines participant activities. Overnight accommodations (i.e., tent camping or indoor lodging) on the refuge will continue to be permitted for the Ecology School upon approval of an environmental education plan and human health and safety plan. On-site group leaders will ensure adherence to safety policies for each visiting group.

### **FWS and NPS Collaboration in the Chesapeake Bay Watershed**

In October 2010, the FWS and NPS signed a MOU regarding cooperation and collaboration on a variety of efforts within the Chesapeake Bay Watershed. Among these efforts is implementation of the Captain John Smith Chesapeake National Historic Trail (CAJO), America's first water-based national historic trail. The 3,000 mile water trail follows the routes of Captain John Smith's exploration of the Chesapeake Bay and its tributaries in 1607-1609. Through recreational experiences on water and land, knowledge about American Indian societies and cultures of the 17th century is shared and the natural history of the Chesapeake Bay and tributaries are interpreted.

During 2011, the FWS actively participated in the planning process for implementing the Captain John Smith Chesapeake NHT on the James River. Presquile NWR has been identified as a key site for interpretation and education. Through continued collaboration, the FWS and NPS will ensure that Captain John Smith Chesapeake NHT-related activities proposed to occur at Presquile NWR are implemented in a manner that is compatible with the purpose and intent of the refuge.

#### **(e) Why is the use being proposed?**

The NWRSA identifies these four uses as priority public uses that, if compatible, are to receive enhanced consideration over other general public uses. These four uses have been allowed since Presquile NWR was established in 1953 without unacceptable impacts to the refuge. Continuing these compatible priority public uses at Presquile NWR will facilitate public enjoyment of and advocacy for the refuge, the NWRS, and the FWS mission.

Partner-sponsored programs will clearly convey key FWS messages about conservation. Ecology School programs will include opportunities to conduct hands-on habitat improvement projects and various other activities on Presquile NWR to instill an 'ownership' or 'stewardship' ethic in program participants.

Allowing these four public uses will also support visitor services goals developed for Presquile NWR's CCP:

*Environmental Education Goal: Immerse visitors in environmental education experiences to inspire appreciation and stewardship of our natural and cultural resources, expand understanding of the significance of the James River to the Chesapeake Bay, and raise awareness of the National Wildlife Refuge System.*

*Interpretation and Wildlife-Dependent Recreation Goal: Provide opportunities for visitors to connect with nature and enhance their appreciation, understanding, and enjoyment of the Refuge's natural and cultural resources through a variety of quality, wildlife-dependent public uses, including interpretation, wildlife observation, nature photography, and hunting.*

## **AVAILABILITY OF RESOURCES:**

The financial and staff resources necessary to provide and administer these uses at their current levels are now available. We expect the existing financial resources to continue in the future, subject to availability of appropriated funds. Recommendations detailed in the CCP and Visitor Services step-down plan would identify strategies for implementation. Current annual administrative costs associated with the existing refuge-supported operations for wildlife observation, photography, environmental education, and interpretation programming are detailed in Table B.4.

There will be an initial one-time cost to establish the baseline monitoring that can be funded through either refuge budget or special project monies, depending on the anticipated amount.

## **ANTICIPATED IMPACTS OF THE USE:**

### **Background**

Currently, Presquile NWR operates their biological and visitor services programs under interim goals and objectives derived from the language in the 1953 refuge establishment purposes, the NWRSA, and the refuge's Biological Profile of 2002. Until the refuge's CCP is completed, these interim goals and objectives provide the context for making management decisions affecting both the biological and visitor services programs. Reevaluation of goals and objectives is one of the early steps in the development of a refuge CCP. Presquile NWR embarked on its CCP development process in January 2011. Once the CCP is approved, this compatibility determination will be revised, updated, or amended, as warranted, to be consistent with the decisions made in that plan.

Specific refuge objectives stated in the Biological Profile of 2002:

- To improve and maintain swamp, marsh habitats capable of supporting waterfowl populations at objective levels;
- To provide habitat sufficient to maintain a wintering flock of Canada geese at objective levels;
- To manage refuge habitat sufficient to provide for optimum numbers of resident wildlife species; and
- To provide an opportunity to view wildlife in its natural environment.

Quantitative population objective levels for geese and ducks were never set for two reasons. First, information on refuge responsibility within the landscape for wintering waterfowl populations was lacking. Second, a CCP for Presquile NWR was anticipated to be completed in the short-term future.

New information about the refuge's contributions toward populations of several bird species of conservation concern has been acquired since 2002 and has influenced implementation of the public use program. During the Lower James River Important Bird Area designation process, we learned that Presquile NWR contributes significantly to several bird species of conservation concern, including breeding prothonotary warblers, nesting and roosting bald eagles (listed as state threatened), roosting purple martins, wintering rusty blackbirds, breeding black ducks, ground nesting American woodcock, wild turkey, and northern bobwhite quail (National Audubon Society 2007). Bald eagle nest productivity flights conducted by the Center for Conservation Biology (CCB) revealed a high concentration of wintering and nesting bald eagles in the area (Watts and Byrd 2010).

Additionally, the public use program on the refuge is affected by FWS policy to ensure that the biological integrity, diversity, and environmental health (BIDEH) of the NWRs are maintained for the benefit of present and future generations of Americans. The FWS policy on BIDEH (601 FW 3) provides for the consideration and protection of the broad spectrum of fish, wildlife, and habitat resources found on national wildlife refuges and associated ecosystems. As a result, the CCP may also include new objectives to protect non-avian wildlife and their habitats, including state listed reptiles (e.g., spotted turtle, box turtle, and hog-nosed snake), amphibians,

and pollinators. All refuge-specific goals, objectives, and strategies will be developed within the context of the refuge's establishing purpose, anticipated effects of climate change, and using the strategic habitat conservation approach.

In an effort to consider and protect the broad spectrum of fish, wildlife, and habitats present at Presquile NWR, adverse impacts to the refuge's BIDEH will be avoided or minimized when implementing public use programs by establishing stipulations that control the use context, intensity, and duration.

### **Soils, Vegetation, and Wildlife**

Refuge visitors will be concentrated in the 17-acre public use area (i.e., trail network and lawn areas adjacent to buildings). As a result of their activities, visitors are likely to generate noise, trample vegetation, and occupy buildings with windows and lighting. Wildlife and habitat in the vicinity may be impacted.

Visitor use in the uplands occurs in areas dominated by hardy fescue, which is able to withstand high foot-traffic. The existing dock and boardwalks serve to connect the waterways to the uplands and avoid visitor-caused impacts to sensitive areas and resources.

Increased foot traffic and construction equipment are the primary sources for introduction of non-native, invasive plant species. Increased visitation is the primary factor for site damage and deterioration at many campsites, primarily through trampling of vegetation (Kuss and Hall 1991) and loss of organic soil (Cole and Marion 1988). Some salamander species will not cross openings that are too wide, dry, graveled, or bare ground (Marsh et al. 2005, Vinson 1998).

Noise and motion near nesting or roosting sites may cause wildlife to flush and expend energy otherwise needed for reproductive success or overwintering survival (Burger 1981, Klein 1989). External lighting fixtures and light from internal sources can disorient birds and amphibians and fatally attract pollinators (Brown et al. 2007; Buchanan 2002; Frank 1988, 2002). Large glass windows that reflect habitat or look deceptively like open sky kill millions of birds each year in the United States, especially during night migration and near stopover sites (Brown et al. 2007).

The FWS abides by the joint Service-State Bald Eagle Protection Guidelines for Virginia (VDGIF 2008). These guidelines include time of year restrictions and distance setbacks from nests and concentration areas. At Presquile NWR, the public use area is located beyond the 660-ft maximum buffer requirement for active bald eagle nests. No impacts to Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*), a National Marine Fisheries Service Species of Concern, or the federally threatened sensitive joint-vetch (*Aeschynomene virginica*) will result from wildlife observation, photography, environmental education, and interpretation on the refuge.

### **Public Access and Use**

Refuge visitation has been affected by reductions in refuge staff, budget, and transportation capabilities. During the 1980s, three full-time employees and one part-time employee administered activities and facilitated visits by ferrying approximately 2,600 people to the refuge annually. In recent years, only one full-time employee has been administering activities and facilitating visits to Presquile NWR, as well as at James River NWR and Plum Tree Island NWR. In 2001, the U.S. Coast Guard deemed the ferry unsafe for continued transportation of the public to Presquile NWR. Currently, refuge- and partner-sponsored programs are facilitated through the use of single and multi-passenger watercraft.

Visitation has declined to 400 people annually. Visitation is planned to increase gradually to nearly the historic level, while avoiding unacceptable impacts to resources. Current and predicted visitation limits are detailed in Table B.5.

Ideally, expanded wildlife observation, photography, environmental education, and interpretation activities conducted on Presquile NWR would positively contribute to appreciation and protection of migratory birds and their habitats, both on and off the refuge. There may be short-term disturbance to common plants and wildlife during some refuge-authorized, off-trail activities, but this will be monitored by staff and partners to ensure the effort does not result in long-term disturbance.



The monitoring of natural resource impacts associated with visitor use patterns will be conducted by staff, volunteers, or contractors on an annual and seasonal basis. Currently, infrastructure improvements at the refuge are being supervised by the Outdoor Recreation Planner. These infrastructure improvements will be completed prior to commencing the Ecology School. The Outdoor Recreation Planner's time will then be reallocated to developing, coordinating, and implementing a visitor impact monitoring program.

Data and information generated by on-going biological surveys (i.e., eagle surveys conducted by CCB at the College of William and Mary; prothonotary warbler research conducted by Virginia Commonwealth University; and herpetological assessments conducted by Virginia Herpetology Society) will be considered in the development of a visitor impact monitoring program. Examples of new information about impacts related to trail and building use that may be desirable to monitor include: wildlife basking or nesting in the field margins (e.g., quail, woodcock, box turtle); encroachment of native plant communities by invasive plant species; bird collisions with windows; and behavior and mortality of night-flying pollinators.

Protocols and thresholds for visitor impact monitoring (such as in Goff et al. 1988) will be developed by a monitoring team.

### **PUBLIC REVIEW AND COMMENT:**

A news release announcing the availability of the draft compatibility determination (CD) for a 15-day public review and comment period was issued the following media outlets on September 12, 2011: Chesterfield Observer and Richmond Times Dispatch. A copy of the draft CD was made available for public review and comment at these locations:

Refuge Complex Headquarters: 336 Wilna Road, Warsaw, Virginia 22572  
Refuge Charles City Sub-office: 11116 Kimages Road, Charles City, Virginia 23030  
Hopewell Regional Library: 245 East Cawson Street, Hopewell, Virginia 23860  
Chester Library: 11800 Centre Street, Chester, Virginia 23831-1781  
Internet: <http://www.fws.gov/northeast/presquile>

The draft CD was distributed to representatives of the Richmond Audubon Society, James River Association, Virginia Council of Indians, and NPS. During the public comment period, we received two letters in support of the finding that these four priority public uses were determined to be compatible with the refuge purpose. The NPS suggested that a reference to the partnership between the NPS and FWS be included in the CD because the James River Segment Plan for the Captain John Smith Chesapeake NHT includes proposed actions that would occur on Presquile NWR. We incorporated a reference to this partnership in the subsection titled "FWS and NPS Collaboration in the Chesapeake Bay Watershed" (pages 3-4) of this final CD.

### **DETERMINATION (CHECK ONE BELOW):**

- ☐ Use is not compatible
- ☒ Use is compatible, with the following stipulations

### **STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:**

Presquile NWR has developed a list of criteria for determining whether any given refuge location would be appropriate for wildlife observation, photography, environmental education (including overnight accommodations), or interpretation. These criteria would apply to current and future programs, trails, and facilities, and are in addition to the joint Service-State Bald Eagle Protection Guidelines for Virginia (VDGIF 2008). Criteria are as follows:

Locations for wildlife-dependent public uses should:

- Provide an opportunity to view a variety of habitats and wildlife;
- Be safe for the access proposed at current use levels and proposed future use levels;
- Require minimal annual maintenance to ensure safe access and prevent habitat degradation;
- Have a low potential for fragmenting habitat or disturbing wildlife populations;
- Occur where less than 50% of the trail system's length occupies soil types rated as high or very high for compaction and/or erosiveness; and
- Predominately occupy previously modified substrate (graveled, cultivated, or filled), such as old roads and former farm fields.

Additional stipulations to ensure compatibility include:

- Presquile NWR regulations will be posted and enforced. Closed areas will be established as needed, posted, and enforced. Signs necessary for visitor information, directions, and safety will be kept current.
- Walking and hiking to facilitate wildlife observation, photography, environmental education, and interpretation is only compatible on designated trails.
- To promote public safety, accommodate other users, and reduce wildlife disturbance, only limited, unchaperoned visitor access for individuals and groups will be authorized, provided they receive prior permission in the form of a General SUP.
- Potential conflicts with other public uses and management activities will be minimized by requiring advanced permitting for all public access of unchaperoned individuals or groups. Refuge- or partner-sponsored events and programming will require preregistration. Visitor group sizes and visitation frequency will be limited during sensitive time periods for wildlife or in sensitive locations (i.e., wetlands).
- The JRA will coordinate with refuge staff, well in advance, to schedule and outline activities for all day-trip and overnight environmental education programming as stated in the existing MOU. The JRA will provide a description of proposed activities, location on the refuge, time of day or night, number of participants, so that potential impacts and avoidance measures can be determined. A General SUP, detailing request procedures, reporting policy, and other required content will be provided annually for joint signature between the FWS and JRA. The General SUP will list all conditions necessary to ensure compatibility.
- Increased visitation would only occur if adverse effects to refuge resources could be avoided and when a high quality visitor experience can be achieved.
- No activities will be allowed that may adversely impact any federally threatened or endangered species. The known presence of a threatened or endangered species will preclude any new use of an area until the Refuge Manager determines otherwise.
- Public use areas and facilities will be maintained in good, working or safe condition. Regularly used roads, trails, landings are distanced from sensitive habitats, migration corridors, and transition zones between adjacent habitats. If necessary, portions of trails may be closed or traffic rerouted away from hibernacula, wetlands, nesting sites, seeps, ravines, and coves. Where early spring migrating amphibians may be impacted by foot traffic (such as on the eastern forest/grassland interface), grass cover on trails through bottomland will keep trails moist. Graveling tread surfaces is done only where necessary. Canopy cover is maintained to encourage cool, moist forest floor in terrestrial buffer or migration zones and to protect wetland connectivity.
- We will evaluate sites and programs as needed to assess whether objectives are being met and to prevent site degradation. If evidence of unacceptable adverse impacts appears, the location(s) of activities will be rotated with secondary sites, curtailed, or discontinued.



- Best management practices will be used to avoid introductions of non-native, invasive plant species.
- Perimeter lighting of buildings will be reduced and incorporate cut-off shields to prevent unnecessary upward lighting. Motion sensor lighting and minimum wattage bulbs will further reduce light pollution and light attraction. A lights-out program will be developed for peak migration periods for various light-sensitive species.
- Bird-safe strategies will be used to reduce light trespass from interior and exterior sources during activities associated with overnight accommodations. In any new construction, smaller windows and non-reflective or screen-scrim-fitting window treatments will be used to reduce habitat reflections. Trees will be planted in front of large windows, within 3 ft.
- The FWS encourages limited watercraft traffic in the eagle concentration areas, adherence to the state guidelines, and raising public awareness about eagle protection and recovery on the James River.

### **JUSTIFICATION:**

Wildlife observation, photography, environmental education, and interpretation are all priority public uses and are to receive enhanced consideration on refuges, according to the NWRSA. Providing increased wildlife-dependent recreational opportunities at Presquile NWR promotes visitor appreciation and support for the refuge, NWRS, and FWS; engages communities in local habitat conservation efforts in the lower James River and the Chesapeake Bay; and instills a sense of ownership and stewardship ethic in refuge visitors.

Wildlife observation, photography, environmental education, and interpretation, as described above, will not detract from the purpose and intent of the refuge. Stipulations described will ensure proper control over the use and provide management flexibility should detrimental impact develop. Allowing this use furthers the mission of the NWRS and FWS by expanding opportunities for wildlife dependent uses when compatible and consistent with sound fish and wildlife management. We have determined that wildlife observation, photography, environmental education, and interpretation will not materially interfere with, or detract from, the fulfillment of the NWRS mission or the purposes for which the refuge was established.


### **SIGNATURE:**

Refuge Manager:

 10/6/11  
(Signature and Date)

### **CONCURRENCE:**

Regional Chief:

 10/10/2011  
(Signature and Date)

### **MANDATORY 15 YEAR RE-EVALUATION DATE:**

10/10/2026

## **LITERATURE CITED:**

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**Table B.4. Current Annual Administrative Costs Associated with Wildlife Observation, Photography, Environmental Education and Interpretation.**

Activities	Resource	Annual Duration	Rate <sup>1</sup>	Cost
Coordination, SUP processing, field assistance, infrastructure maintenance	Refuge Manager (GS-13)	6 hours	\$44 / hour	\$264
	Outdoor Recreation Planner (GS-11)	260 hours	\$31 / hour	\$8,060
	Maintenance Staff (WG-08)	16 hours	\$23 / hour	\$368
Monitoring, recording/reporting use statistics, evaluating resource impacts	Outdoor Recreation Planner (GS-11)	20 hours	\$31 / hour	\$620
	Wildlife Biologist (GS-11)	40 hours	\$31 / hour	\$1,240
Use of Facilities	Education Center	22 days	\$12 / day	\$500
Use of Equipment	Vehicle or watercraft	22 days	\$20 / day	\$1,000
<b>TOTAL</b>				<b>\$12,052</b>

Note: Some actions, and resulting costs, also support other approved public uses (i.e., hunt program).

<sup>1</sup> In 2011 dollars, base salary not including staff benefits at GS-Step 5 or WG-Step 3.

**Table B.5. Annual Visitation Limits**

Refuge Uses Breakdown by Use Group	Number of Visitors per Fiscal Year <sup>1</sup>					Visitation Limit per Fiscal Year After 2015 <sup>2</sup>	
	2010	2012	2013	2014	2015	Number of Visitors	Number of Visitor Use Days <sup>3</sup>
<b>Environmental Education</b>	<b>100</b>	<b>620</b>	<b>900</b>	<b>1160</b>	<b>1560</b>	<b>1940</b>	<b>5060</b>
<i>Weekend Overnight</i>	<i>85</i>	<i>100</i>	<i>150</i>	<i>180</i>	<i>200</i>	<i>220</i>	<i>220</i>
<i>3Day Camp</i>	<i>0</i>	<i>300</i>	<i>450</i>	<i>600</i>	<i>900</i>	<i>1200</i>	<i>3600</i>
<i>5Day Camp</i>	<i>0</i>	<i>60</i>	<i>90</i>	<i>120</i>	<i>150</i>	<i>180</i>	<i>900</i>
<i>Teacher Workshops</i>	<i>0</i>	<i>40</i>	<i>60</i>	<i>80</i>	<i>100</i>	<i>100</i>	<i>100</i>
<i>Day Programs</i>	<i>15</i>	<i>120</i>	<i>150</i>	<i>180</i>	<i>210</i>	<i>240</i>	<i>240</i>
<b>Hunting<sup>4</sup></b>	<b>91</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Wildlife Observation, Photography, and Interpretation<sup>5</sup></b>	<b>114</b>	<b>115</b>	<b>115</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>
<b>TOTAL</b>	<b>305</b>	<b>835</b>	<b>1115</b>	<b>1510</b>	<b>1910</b>	<b>2290</b>	<b>5410</b>

<sup>1</sup> Refuge visitation would be limited throughout the year to minimize human-caused disturbance to wildlife. The refuge would be open to visitors for up to 203 days each year. The number of visitor use days would vary by season as follows: 25 in winter, 77 in spring, 25 in summer, and 76 in fall.

<sup>2</sup> The visitation limit per fiscal year after 2015 may be subject to change based on the findings of annual evaluations for refuge uses and associated impacts within the next five years (fiscal years 2011 through 2015).

<sup>3</sup> Visitor Use Days equate to the number of visitors participating in activities at the refuge per day. For example, five refuge visitors on a single afternoon constitute five visitor use days while five visitors participating in a 3-day environmental education camp constitutes 15 visitor use days.

<sup>4</sup> Deer hunting is permitted for three days during November.

<sup>5</sup> Visitors often engage in wildlife observation, photography, and interpretive programs during a single visit.

Figure B.3. Location and relation of Presquile National Wildlife Refuge to conservation lands in the vicinity.

